PACKAGE DELIVERY
Simplifying Linux installations will be a priority at LinuxWorld. PAGE 6

VITAL INTERESTS
Users and vendors need to find ways to keep user groups in business, says SmithBucklin's Julie Silverstein. PAGE 20

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AUGUST 8, 2005 ■ VOL. 39 ■ NO. 32 ■ $5/COPY

EMMANUEL KERNER

E-mail EXPOSURE

An employee unintentionally transmits a computer virus to a business partner, and it causes thousands of dollars in damage. Is your company liable? Some legal experts predict that you may be hauled into court to find out. **Page 37**

Cisco Flaw Raises Concerns, But Attacks Deemed Difficult

IT managers put trust in defensive measures; router vulnerability seen as complex to exploit

BY JAIKUMAR VIJAYAN

The public demonstration of an attack against a Cisco Systems Inc. router at last month's Black Hat USA conference showed that a core part of corporate networks may be more vulnerable to hackers than many users had assumed.

But, IT managers and security analysts said last week, companies that follow recommended practices for securing their networks should be reasonably well protected despite the fact that attackers now have information on how to shut down routers by exploiting a previously disclosed software flaw.

"In the end, the Cisco case is no different than [a hack against] a Microsoft or Unix box," said Andreas Wuchner-Bruhl, head of global IT security at Novartis Pharma AG, a

Cisco Flaw, page 52

MORE INSIDE
Cisco resets user passwords on its Web site because of a search engine flaw; Microsoft says hackers have bypassed its new antipiracy check. Page 52

NEWSPAPER

Sarbanes-Oxley Trumps IM at Some Firms

Concerns about security, archiving prompt companies to unplug instant messaging systems

BY THOMAS HOFFMAN

In another case of fallout from the passage of the Sarbanes-Oxley Act, some companies are disabling their instant messaging systems because of concerns that the technology's security and archival controls aren't strong enough to comply with the law, according to IT executives, lawyers and auditors interviewed last week.

ONLINE
Read our full Sarb-Ox coverage: QuickLink a3250

Section 302 of Sarbanes-Oxley requires CEOs and chief financial officers to certify that their companies have established internal controls and are regularly evaluating the effectiveness of the control measures. Although vendors such as FaceTime Communications Inc. and IMlogic Inc. offer tools for storing messaging traffic and protecting against malware, users like Jefferson Wells International Inc. are erring on the side of caution by simply unplugging their IM systems.

Jefferson Wells disconnected its MSN Messenger system because of concerns that the company wouldn't be able to detect software viruses embedded in messages, said Scott Robertson, manager of corporate IT operations at the Brookfield, Wis.-

IM Security, page 16

Users Speed Feeds to Data Warehouses

BY HEATHER HAVENSTEIN

As business intelligence becomes a critical component of daily operations, real-time data warehouses that can provide end users with rapid updates from transactional systems are increasingly sprouting up at companies.

For example, online retailer Overstock.com Inc. has begun connecting users to a real-time data warehouse it completed last month. The project's goal is to help employees gain insight into the effectiveness of the company's online and e-mail advertising campaigns.

Overstock is using transactional data management

Warehouses, page 16

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In the Management section: Those hotshot new hires come with handhelds and smart phones that you haven't even thought about dealing with. What will you do about standards, security and costs? **Page 40**

Targeting the Enemy Within

In the Technology section: It's not just the disgruntled or careless employee who poses an inside security threat. Companies are also dealing with the risks created by suppliers, partners and service providers with inside access to enterprise networks. **Page 23**

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6 **Linux-based systems** may become easier to install and manage with new packaged options that major vendors plan to announce this week.

7 **Large companies** are increasingly outsourcing human resources functions and IT rather than upgrading their ERP software.

7 **AT&T will offer** hosted services for utility computing and server virtualization.

10 **The government's** plan to offer low-cost software to small medical practices could help large health care systems by promoting the use of electronic health records industrywide.

12 **Computer Associates** discloses a major security flaw in its data backup software, and analysts say it's an example of just how vulnerable storage software is.

12 **Fujitsu builds** a notebook PC that can be converted into a tablet device for use in health care and other niche markets.

14 **Global Dispatches:** Oracle agrees to buy majority control of a banking software vendor based in India; and Sun will open a data center in Scotland for remotely managing customer systems.

14 **IBM ships** a network-attached storage device made by Network Appliance and will replace its own NAS line with more NetApp models in the fall.

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20 **Julie Silverstein** shares some research that suggests ways to maintain user groups' value for members and vendors.

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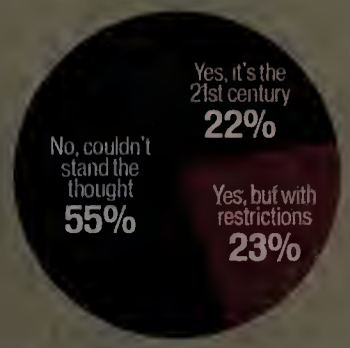
QuickPoll Results

Should mobile phone use be allowed on airplanes?



Take this week's QuickPoll at **www.computerworld.com**.

SOURCE: *COMPUTERWORLD.COM* NONSCIENTIFIC SURVEY; 476 VOTES

Are We Safer Yet?

SECURITY: In the wake of the release of information on Cisco's router flaw, security analyst Pete Lindstrom asks whether companies or the Internet are safer. Or is there something else we should be doing? **QuickLink 55917**

Ten Tips for Faster Backups

STORAGE: By following these simple suggestions, backup managers can ease many of their storage headaches, says Robert Farkaly of Overland Storage. **QuickLink a6850**

Storage Delivery of the Future

WEBCAST: Hewlett-Packard executive Ann Livermore discusses the relentless move toward digital, mobile and virtual technologies. Presentation recorded at Storage Networking World Spring 2005. **QuickLink a6840**

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QuickLink a1430

Knowledge Centers
QuickLink a2570

The Online Store
QuickLink a2420

AT DEADLINE

Microsoft Goes to Wal-Mart for Exec

Microsoft Corp. named Kevin Turner, a 40-year-old executive from Wal-Mart Stores Inc., to fill its chief operating officer position. Turner will join Microsoft on Sept. 8 and take over responsibility for the company's sales, marketing and services organization as well as its fulfillment and IT operations. He was Wal-Mart's CIO from 2000 to 2002 and most recently was president and CEO of the retailer's Sam's Club division.

Security Vendor: ID Theft Ring at Work

Sunbelt Software Distribution Inc., a vendor of antispyware tools in Clearwater, Fla., said it stumbled upon an identity theft ring that's using a spyware program to systematically break into and steal confidential information from computers. The data is being uploaded to a remote server that appears to be located in the U.S., Sunbelt said, adding that it has notified the FBI. Officials at the FBI couldn't be reached for comment on Friday.

Six Security Fixes Due for Windows

Microsoft said it plans to release six software patches to address security flaws in Windows tomorrow as part of its monthly update process. The company didn't release details, except to say that some of the vulnerabilities will be given "critical" ratings. Microsoft will also issue an updated version of its malware removal tool and a Windows update that doesn't relate to any security holes.

Short Takes

NEC CORP. said it has developed a rechargeable battery made from organic compounds instead of hazardous materials like lithium. . . . SPRINT CORP. and NEXTEL COMMUNICATIONS INC. said the Federal Communications Commission approved their merger.

IT Gets More Packaged Options for Linux, Grid

Dell, IBM, HP aim to improve ease of use for technology

BY CAROL SLIWA

CORPORATE users who may have been hesitant to take the open-source plunge will get new packaged options this week from major vendors that are continuing to try to make it easier to acquire, use and manage Linux-based systems.

Dell Inc., Hewlett-Packard Co. and IBM are among the many vendors that will use the LinuxWorld Conference & Expo in San Francisco to launch products and services designed to make users more comfortable with choosing Linux and other open-source software offerings.

Dell, for instance, plans to introduce PowerEdge 830 and 850 servers with dual-core Intel processors and give customers the option of bundling a stack of open-source software with the hardware.

Users can get Red Hat or SUSE Linux, plus the MySQL database and JBoss application server. In addition, they now can buy support subscriptions for the MySQL Network and JBoss Network directly from Dell.

The goal is to help open-source users quickly get up and running with a tested and supported system, similar to the way they can launch Windows servers out of the box, said Judy Chavis, director of business development and global alliances for Linux and open-source at Dell.

Easier Adoption

The availability of bundled offerings hasn't been crucial for many early Linux adopters that have the necessary in-house skills to configure and install systems themselves.

Joseph Foran, director of IT at FSW Inc. in Bridgeport, Conn., said it has never been a problem for the nonprofit social services agency to install Linux and the rest of the so-called LAMP stack, which also includes the Apache Web server, MySQL and either the Perl, PHP or Python scripting languages. An enhanced LAMP stack that has an application server configured with business applications might be helpful, Foran said. "But if you have the expertise," he added, "it doesn't really matter."

> **Grid has had an aura of complexity, and we want to take the complexity out of it.**
>
> AL BUNSHAFT, VP OF GRID COMPUTING, IBM.

However, as Linux continues to gain momentum as a mainstream IT option, more companies will want to hit the ground running and find vendors that make it easy to use the technology, said Dan Kusnetzky, an analyst at Framingham, Mass.-based IDC.

A lack of required application software and a lack of expertise at customer sites have been "the big impediments to Linux adoption," he noted.

HP will try to foster more use of open-source software by opening four Linux Expertise Centers in the U.S. for software vendors, developers and systems integrators to make sure their products work with its hardware. Also this week, HP plans to announce the availability of more than 200 open-source software packages for its HP Integrity NonStop servers.

IBM will try to lure more users to try grid computing by launching a "Grid and Grow" package that includes a choice of BladeCenter server options with a chassis ready for expansion, an operating system, grid middleware and services. Pricing starts at $49,000.

Al Bunshaft, vice president of grid computing at IBM, said more than two-thirds of the grid deployments that the company is involved in are Linux-based. "Grid has had an aura of complexity," he said, "and we want to take the complexity out of it."

One sign that software vendors are trying to draw more attention to their Linux support is the LinuxWorld exhibit hall debut of SAP AG, which hopes to make users more aware that its applications run on the operating system. The percentage of SAP users with Linux is small but growing rapidly, said Torsten Geers, an SAP vice president. **56019**

Novell Opens Development of SUSE Linux

NOVELL INC. this week plans to launch a community-based effort to open up development of its SUSE Linux operating system. The company's strategy includes an attempt to accelerate the use of the software by flooding the market with copies through a variety of outlets.

Novell's openSUSE initiative is already being compared to the Fedora Project that rival Red Hat Inc. sponsors for its Linux distribution. New technology that emerges from the work of the Fedora community is considered for inclusion in Red Hat's software products.

George Weiss, an analyst at Gartner Inc., said many companies use Fedora for experimental purposes and then often move on to become users of Red Hat Enterprise Linux. Novell needed to create a similar open-source community for SUSE Linux as part of its effort to attract users away from Red Hat, he said.

Minimal Input Upfront

Novell has been developing SUSE Linux internally through a closed model, with little front-end input from the open-source community at large, said Greg Mancusi-Ungaro, the company's director of Linux and open-source marketing. Now it plans to adopt "a completely open and transparent model" for developing the software, he said.

Previously, Novell made available a SUSE Linux Professional edition aimed at technical enthusiasts and developers. That version often served to preview features that eventually turned up in the SUSE Linux Enterprise Server operating system for corporate users. SUSE Linux Professional will now be known simply as SUSE Linux, the company said.

Novell plans to release an initial beta of SUSE Linux 10.0 this week at LinuxWorld. The final version is due in October, according to Mancusi-Ungaro. He said the company expects to release a 10.1 version six months later and continue with new editions every six months thereafter. A public-code repository will be set up next year.

Novell plans to offer a retail version for end users with a user guide and installation support but will also give away SUSE Linux DVDs at LinuxWorld and make them available through magazine inserts in an effort to make it easier for users to gain access to Linux, Mancusi-Ungaro said.

"We're trying to make our Linux available in all the ways customers demand," he said. "We hope that by doing so, we'll help to move the needle on Linux adoption worldwide."

– Carol Sliwa

HR Outsourcing Picking Up Steam

ERP licensing and consulting costs seen as factors

BY PATRICK THIBODEAU AND MARC L. SONGINI

When PepsiAmericas Inc. wanted to automate some human resources processes, it could have expanded its own PeopleSoft ERP system, but that would have required buying more software, hiring consultants and stressing an already tapped-out IT staff.

Instead, Dana Sacks, vice president of compensation, benefits and human resources information systems, said she turned to managed service provider Authoria Inc. in Waltham, Mass., to automate performance management processes, bonus calculations and succession planning.

Sacks said her Minneapolis-based, 11,000-employee company will evaluate managed services for more applications, and she wouldn't rule out replacing ERP systems with service providers.

PepsiAmericas isn't alone. Technology Partners International Inc. (TPI), an outsourcing consultancy in The Woodlands, Texas, reported that so far this year, 14 companies with more than 10,000 employees have outsourced workforce administration.

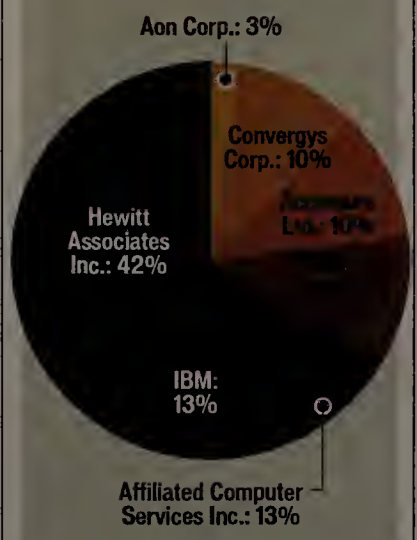
"We think the long-term trend is an erosion of the adoption of ERP as an infrastructure in the corporate enterprise and moving away from licensing software to buying services," said Peter Allen, managing director and partner at TPI.

Outsourcing HR

Companies have outsourced payroll and benefits administration for many years, but the move to outsource virtually all HR activities — business processes and IT — is still new. One out of 10 companies has done some HR outsourcing, but only about half of those companies have outsourced everything, estimated Michael Cornetto, a consultant at Watson Wyatt & Co. in Arlington, Va. But he said the market for total HR outsourcing is growing 30% per year.

Leader Board

Market share for workforce administration service providers (year to date):



Note: Figures don't add up to 100% because of rounding.

SOURCE: TECHNOLOGY PARTNERS INTERNATIONAL INC., THE WOODLANDS, TEXAS

Late last month, Whirlpool Corp. signed a 10-year deal to outsource HR business processes for 68,000 employees to Convergys Corp. in Cincinnati. A major reason was the need to improve HR technology, said Abby Luersman, vice president for HR solutions at Benton Harbor, Mich.-based Whirlpool.

Whirlpool was underinvesting in IT and needed "better decision-making with better data," Luersman said.

'Bite-Size Pieces'

So far, Whirlpool is using Convergys to integrate its self-service model with its SAP system and take over some of the transaction processing, she said. But over time, some HR IT systems could move to the outsourcer's data center, Luersman said. "This is a 10-year agreement with Convergys, and clearly we're doing it in bite-size pieces," she said.

Memorial Health Services Corp. in Long Beach, Calif., is a PeopleSoft ERP shop that already had an HR application license but decided it would be cheaper to outsource benefits and other functions, said Patti Ossen, senior vice president of human resources at the hospital group.

Deploying PeopleSoft's benefits software would have required an external consultant, cost about $350,000 and taken about 5,000 hours, she said. So Ossen turned to hosted providers, including Employease Inc. in Norcross, Ga.

But it's not a path for all companies. David Rudzinksy, CIO at Bedford, Mass.-based medical instruments maker Hologic Inc., said he uses the payroll services of Automatic Data Processing Inc., whose system is integrated with the human resources module in his Oracle eBusiness Suite 11i ERP system.

"This was a major improvement in the process and makes the payroll/human resources people more efficient," he said, adding that he doesn't want to use any external providers of other HR functions. 56020

MORE THIS ISSUE

Don Tennant explains why you should take a lesson from the Chicago public schools when it comes to hosted apps. Page 20

AT&T to Offer Managed Utility Computing Service

Hosting unit will also add server virtualization in Q4

BY MATT HAMBLEN

AT&T Corp. will launch a managed utility computing service late this year based on hardware from Sun Microsystems Inc. as one of several improvements to its hosting service, AT&T executives revealed in interviews last week.

The utility computing service, to be formally announced and offered sometime in the fourth quarter, would give businesses automatic and on-demand access to computing resources to scale up and down efficiently, said Mike Jenner, vice president of hosting and application management services at AT&T.

Jenner also said AT&T will add server virtualization capabilities for its hosting clients in the fourth quarter.

For users, the big advantages of both utility computing and server virtualization include the ability to rapidly provision IT resources and avoid the cost of investing in server hardware, Jenner said.

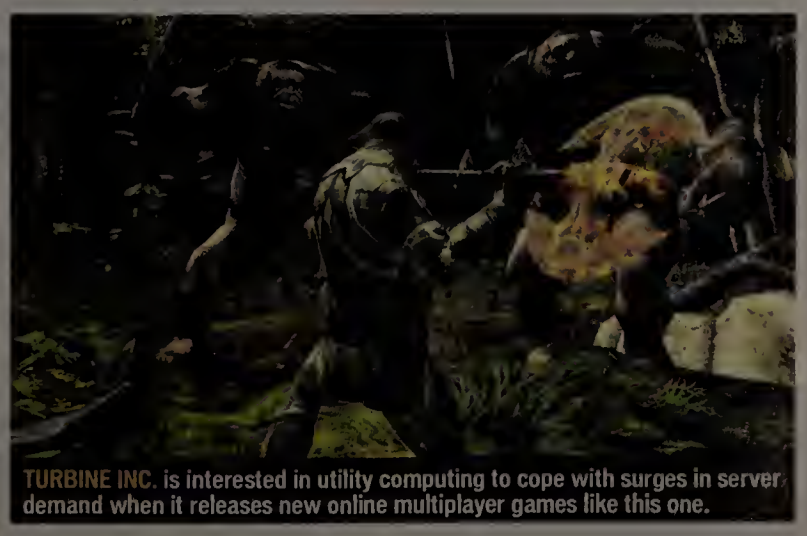
"Customers spend a lot in capital, while their systems often go underutilized much of the year," said Christina Costello, director of product management for AT&T's managed hosting and utility computing services unit.

Service Charges

Companies that choose the utility computing option will pay a base fee each month to get access to a dedicated server — roughly half the cost of leasing one — plus a variable utilization charge, AT&T said.

One existing AT&T hosting customer, Turbine Inc., has been discussing the utility computing service with AT&T "quite seriously," said Michael Hogan, vice president of technology and operations at the Westwood, Mass.-based maker of online games. Turbine is looking at utility computing as a means of handling the enormous surges in network usage it experiences when it releases new multiplayer games.

"We're always looking for ways to spike up capability for the first weeks [after a new game release] and then back off," he said.



TURBINE INC. is interested in utility computing to cope with surges in server demand when it releases new online multiplayer games like this one.

With one earlier game release, Hogan noted, Turbine "grossly underestimated resources" and ended up trying to throw hardware at the problem. Conceivably, with a utility computing service, Turbine would "have a plan in place, quickly scale up in the near term and roll off," he said.

Analysts said AT&T's utility computing service appears to be the first offered by a network services provider. Sun, IBM, Savvis Inc. and Electronic Data Systems Corp. offer utility computing and utility storage services, but the market hasn't grown as much as first projected two years ago, said Ted Chamberlin, an analyst at Gartner Inc.

"Utility computing has been cooking along for a while, but there is limited interest in it," Chamberlin said. "Customers don't exactly call up and say, 'Give me some of that utility computing.' " 56015

BRIEFS

NCR Hires Nuti to Replace Hurd as CEO

NCR Corp. named William Nuti president and CEO, filling the position vacated by Mark Hurd when he left in March to become the top executive at Hewlett-Packard Co. Nuti previously was CEO of Symbol Technologies Inc. in Holtsville, N.Y. Symbol last week reported a $30.5 million second-quarter loss, but an NCR spokesman said the loss "hasn't changed anything" in terms of the company's confidence in Nuti.

Mozilla Decides to Form Corporate Unit

The Mozilla Foundation has created a corporate subsidiary to support its moneymaking activities and handle the marketing of its open-source products. The Mountain View, Calif.-based foundation said the formation of Mozilla Corp. was made necessary by the "unintended but real" revenue generated by a search tool within its Firefox browser that links to search engines and specific Web sites.

Microsoft Acquires Adapters for BizTalk

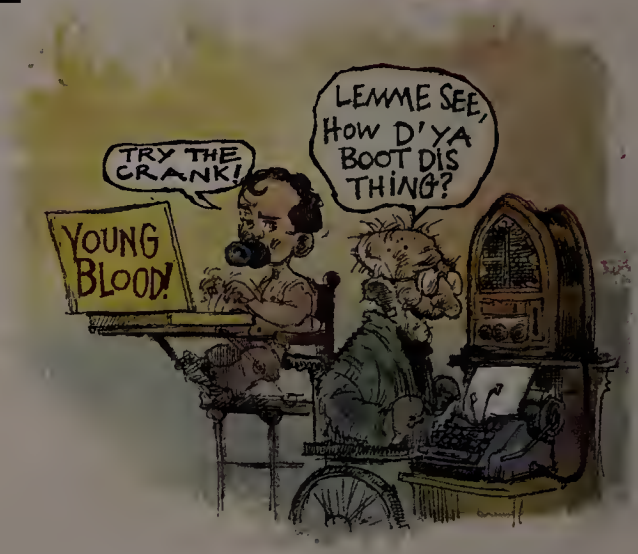
Microsoft Corp. said it has bought eight .Net-based application adapters that work with its BizTalk Server software from iWay Software, a unit of Information Builders Inc. The products supported by the adapters include Oracle applications and databases, plus J.D. Edwards, PeopleSoft and Siebel applications. Microsoft and iWay didn't disclose the purchase price.

Short Takes

IBM announced a version of WebSphere Portal that has a common code base for all of its servers, including the iSeries midrange line and zSeries mainframes. . . . SAP AG named Ike Nassi, formerly chief technology officer at Firetide Inc. in Los Gatos, Calif., to manage its software research work in the Americas region.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL



MATTHEW FAULKNER

Baby Boomers Get Ready for Bed While . . .

. . . their creaking technologies burden IT's maintenance budgets. Worse, argues Damian Smith, a vice president at Dallas-based Hitachi Consulting Corp., keeping mainframes and even client/server systems limping along chews up so many IT resources that many of the companies using them will be bypassed by more nimble competitors that adopt the flexible systems favored by younger IT workers. Smith warns that if your maintenance cost for aging technologies is more than 50% of your IT budget, "you are pretty much dead." (Perhaps that's why the consulting unit's parent company, Hitachi Ltd., *used to* sell mainframes.) But most IT dollars now should be spent on new systems in order to retire the old ones, Smith says. "Lots of companies are now consuming 70% to 90% of their budgets on maintenance and support," he claims. "And when you're doing that, you can't do new things to support high-demand users." The situation is compounded by a generation gap as well. Older technology is generally maintained by more experienced workers who have higher salaries "and are less likely to work longer than 40 hours per week," Smith observes, adding that he thinks efforts by IBM and others to boost interest in mainframes among young whippersnappers [QuickLink 55867] are futile. "Do I invest in new, young blood to train on old technology," he asks, "or get new technology to attract lower-cost, younger workers who are willing to work longer hours?" The answer is obvious, he thinks. It's vital to shift off old platforms now before all those gray heads putter off to senior centers and take their knowledge with them. If you don't, he warns, "the baby boomer bomb could blow up and destroy a few companies in the near future."

SMITH warns IT about old systems and workers.

Flashier Web sites are possible . . .

. . . with the imminent arrival of Studio 8. The upgrade of Macromedia Inc.'s flagship software suite includes new releases of Dreamweaver, Flash Professional and Fireworks but replaces the Freehand illustration program with products called Contribute 3 and FlashPaper 2. Jim Guerard, vice president of product management and marketing at Macromedia, says the San Francisco-based company will continue to sell and update Freehand as a separate application. Guerard says Contribute lets business users update Web pages themselves without having to pester Web designers, although the designers get to control what's included in updates and where, when and how they take place. FlashPaper can convert documents, such as Word files, into Flash files for easy export to Web sites. Among other updates to the products already in the suite, Dreamweaver 8 has improved cascading stylesheets and new guides that let designers precisely position objects on a Web page down to the pixel level. Macromedia, which is due to be acquired by Adobe Systems Inc. under a deal signed in April, plans to ship the $999 suite in September.

98%
Percentage of workstations running Flash Player, estimates NPD Group Inc.

Solidify your server security . . .

. . . by preventing all but approved code from running on systems. That's the approach advocated by Solidcore Systems Inc. in Palo Alto, Calif. According to John Sebes, its chief technology officer, an upcoming security module for Solidcore's S3 Control software will inventory all the binary files, scripts, Dynamic Link Libraries and other forms of executable code that you want running on your computers and permit only those programs to execute. Anything else gets stopped in its tracks, Sebes says. Even sysadmins with root-level privileges can't slip in a favorite script without the permission of the person who oversees S3 Control. The S3 Security module even protects systems from "being tricked by things like buffer overflows," Sebes says. S3 Security will ship next month for Linux, Solaris and Windows servers. Solidcore will add support for AIX and HP-UX servers and Windows XP workstations in Q4. Pricing starts at $2,000 per node and decreases with volume.

SEBES: Stop unauthorized code from running.

Back up your e-mail backup copies . . .

. . . in case disaster strikes. This week, Mimosa Systems Inc. in Santa Clara, Calif., will add a disaster recovery option to its NearPoint archiving software for Microsoft Exchange servers. The new module lets you keep a near-real-time archive of your e-mail outside the data center on a LAN or even elsewhere on a WAN. T.M. Ravi, Mimosa's CEO, claims that because NearPoint doesn't use agents on Exchange systems, it helps make them more stable. The No. 1 reason for Exchange server failures is third-party software running on them, Ravi says. NearPoint begins at $9,995, and the Disaster Recovery option starts at $2,100.

55983

RAVI: Agent-free backup is safer.

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Medical Software From Feds Could Benefit Big Health Care

Low-cost app for small practices seen as aid in effort to computerize records

BY HEATHER HAVENSTEIN

SOME IT MANAGERS at large health care organizations are delighted that the federal government plans to offer its electronic health records (EHR) software to small and midsize physician practices at a low cost. The move is expected to be a significant boon to the efforts of big providers to computerize patient records, the IT managers say.

While many hospitals and large physician practices have deployed EHR software for their patient bases, the systems won't be fully effective unless physicians in smaller medical groups who refer patients for treatment automate their records as well.

The Centers for Medicare and Medicaid Services (CMS) expects to announce the distribution plans for its Vista-Office EHR software this month. The announcement, which has already been widely publicized [QuickLink 55837], was due to take place last week but didn't materialize. Vista-Office has been in use at Veterans Affairs hospitals and clinics for more than 20 years.

Encouraging Adoption

The CMS will allow physicians to license Vista-Office for less than $3,000 for a five-doctor practice, according to a CMS spokesman. The move is designed to address one of the biggest barriers to the Bush administration's goal of computerizing all patient records over the next decade: the lagging adoption rate among smaller practices.

"Vista is a good program, [and] if done correctly, there will be a level of ability to share records across regional health information organizations. It could prove to be a very effective tool for many of our small-practice, community-based M.D.s," said John Hummel, CIO at Sutter Health in Sacramento, Calif. Sutter operates 27 hospitals in Northern California.

Any option that gets physicians to begin to computerize patient records is a good idea, said J. David Liss, vice president of government relations and strategic initiatives at NewYork-Presbyterian Healthcare System.

"Physicians who have rotated through VA hospitals love Vista — having all the patient data in one place is so compelling," Liss said.

Hospitals and health systems could benefit from the government plan because historically, they capture the lion's share of the benefits from EHRs: They get access to patient histories, while the physician practices that compile them bear most of the costs, said Eric Brown, an analyst at Forrester Research Inc.

As a result, large hospitals have a vested interest in making sure that all the physicians referring patients to them are using an EHR system, he said. Brown and others warned that the capital investment in electronic records often can be dwarfed by the training, implementation and configuration costs involved.

Vendors are ramping up to support physicians who will deploy Vista. In May, the not-for-profit organization WorldVista was awarded a contract by the CMS to provide training to vendors that will install the software.

Medsphere Systems Corp. in Aliso Viejo, Calif., will be offering Medsphere OpenVista, an open-source version of the government's software that captures clinical, financial and administrative data. Medsphere will also be providing an ASP version of the software and services such as training, maintenance and support for Vista users, said Scott Shreeve, chief medical officer and co-founder of Medsphere.

Midland Memorial Hospital in Midland, Texas, will go live in December with its first clinical application based on Medsphere's OpenVista. The hospital plans to use the technology to develop a comprehensive EHR system, said David Whiles, director of information systems at Midland.

"It is an extremely mature, very functionally rich electronic record," he said. "It has been in place for 20-plus years, and it is not one of these new systems that vendors are offering, looking for alpha or beta partners."

The OpenVista project will cost less than half of the upfront capital investment required for a commercial EHR product, Whiles said. **56007**

Health Care System Turns To IT for Patient Care Plans

Treatment based on data about similar patients

BY HEATHER HAVENSTEIN

NewYork-Presbyterian Healthcare System is rolling out an IT system that generates suggested care plans for physicians based on data about previous patient outcomes and then sends alerts if treatments don't appear to be working.

The Patient Health Monitor project, which the health care system began two months ago at its flagship NewYork-Presbyterian Hospital, currently uses artificial intelligence (AI) software to create treatment plans for patients in cardiac intensive-care units. The plans are based on the records of 7,500 cardiac patients, which are among 2.5 million patient records in a data repository.

In addition, the system takes data from equipment such as heart monitors and provides alerts to physicians via tablet PCs if patients deviate from projected outcomes, said J. David Liss, vice president of government relations and strategic initiatives at the health system.

Unlike traditional clinical support systems that use rules engines to suggest patient care, the health monitor is based on inferencing technology designed by a NewYork-Presbyterian physician. The software builds care plans by matching patient characteristics such as age, disease type and medication history with successful prior outcomes. "All of the alerts are relevant to the patient because they are based on a history of cases," Liss said.

In addition, because the repository is updated with new patient records every 24 hours, the AI system has an ever-growing pool of data to exploit to generate the care plans, Liss said.

Plans call for the health monitor technology to be expanded to other departments in the hospital and to other hospitals in the NewYork-Presbyterian system, according to Liss.

NEWSCOM

NEWYORK-PRESBYTERIAN HOSPITAL is the first to use the AI-based system.

The project was funded by $250,000 in donations from Verizon Communications Inc. and Intel Corp. and $50,000 worth of donated equipment from Computer Motion Inc. and Dell Inc.

Eric Brown, an analyst at Forrester Research Inc., said he knows of only one other health care entity that has launched a similar initiative. The Mayo Clinic and IBM in August 2004 said they were starting to use a DB2 database to help physicians treat patients.

"This idea of a decision-support system is one of the outcomes we'd like to see from the introduction of electronic medical records ... moving to an era of personalized medicine," Brown said. "It is taking your particular situation and plugging it into the database — not searching for all people who have had a heart attack, but all patients who have had a heart attack who look like you." **56012**

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BRIEFS

IBM Will Buy Data Integration Vendor

IBM said it has agreed to buy DWL Inc., a developer of Java-based software for integrating customer data, for an undisclosed price. DWL has about 150 employees and is based in Atlanta, although most of its operations are in Toronto. IBM, which expects to complete the deal later this year, said it plans to expand DWL's presence in industries such as telecommunications and retail.

Court Denies RIM On Patent Petition

A U.S. appeals court last week reversed one finding that Research In Motion Ltd. had infringed on patents held by NTP Inc. in McLean, Va. But the court upheld other findings and denied RIM's petition for a full rehearing of the patent dispute. A lawyer for NTP said it plans to seek an injunction against sales of RIM's BlackBerry devices in the U.S. Waterloo, Ontario-based RIM said it was still reviewing the decision.

Epiphany Agrees to Buyout After Loss

Epiphany Inc., a CRM vendor in San Mateo, Calif., agreed to a $329 million cash buyout offer from SSA Global Technologies Inc. The deal, which is expected to close within eight to 12 weeks, coincided with Epiphany's disclosure that it lost $8.3 million in the second quarter on revenue of $16.7 million. Chicago-based SSA said it thinks Epiphany will benefit from having access to its software-distribution network.

Short Takes

HMC SOFTWARE INC. reported a $41.1 million first-quarter loss but raised its business forecast for the rest of fiscal 2006. . . .

ADVANCED MICRO DEVICES INC. released versions of its Opteron 100 Series processors that support buffered memory based on error-correcting code technology.

CA Security Hole Points To Data Backup Threats

Vendor patches flaws in storage tools, but concerns about attacks increase

BY JAIKUMAR VIJAYAN

COMPUTER Associates International Inc. last week disclosed a major security flaw in its data backup software, and analysts said the problem is an example of the kind of vulnerabilities that are making storage software more attractive to malicious hackers.

CA released patches to fix what it described as a "critical" vulnerability in its BrightStor ARCserve agent software, which is used to back up and restore data between servers and storage devices.

The buffer-overflow flaw exists in multiple versions of ARCserve Backup and Enterprise Backup for Windows and could allow attackers to take control of systems, execute code or launch denial-of-service attacks, CA warned in a security advisory.

What makes the threat particularly potent is the fact that many companies use the vulnerable CA software on production servers, said Michael Sutton, director of vulnerability research at iDefense Inc., a security threat assessment firm that was recently acquired by VeriSign Inc.

> **"Backup products are designed to prevent catastrophes by recording copies of important data. . . . Unfortunately, those products have become easy targets for attackers.**
>
> FROM THE SANS INSTITUTE'S REPORT ON THE TOP 20 INTERNET VULNERABILITIES DISCOVERED DURING Q2, ISSUED IN JULY

Attackers who take advantage of the flaw could access any data on unprotected servers, Sutton said. Reston, Va.-based iDefense was credited with discovering the BrightStor vulnerability.

Data backup products are becoming increasingly attractive and easy targets for hackers, said Alan Paller, director of research at the SANS Institute, a Bethesda, Md.-based organization that does security training and research.

SANS, which compiles a quarterly list of the top 20 Internet security threats, included several vulnerabilities in widely used data-backup products from CA and Symantec Corp.'s Veritas unit on the list that it released last month for the second quarter.

Such vulnerabilities are sure to attract the attention of malicious hackers because data backup products grant access to virtually all of a company's data, Paller said. He added that operating systems, which have traditionally been the most popular targets, are becoming harder to hack, resulting in more of a focus on relatively less-protected application servers and storage technologies.

So far, there has been little evidence of vulnerabilities in data backup products being widely exploited, said Jon Oltsik, an analyst at Enterprise Strategy Group Inc. in Milford, Mass. But the existence of so many flaws in popular products is worrisome because storage teams often know little about security issues and don't adhere to corporate policies, he said. "Storage has always been designed for performance and availability, not security," Oltsik noted.

56024

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For additional coverage of security issues, visit our Web site:

QuickLink k1600
www.computerworld.com

Fujitsu Builds Tablet PC Support Into Notebook

Includes swivel top, plus touch-screen and writing tools

BY MATT HAMBLEN

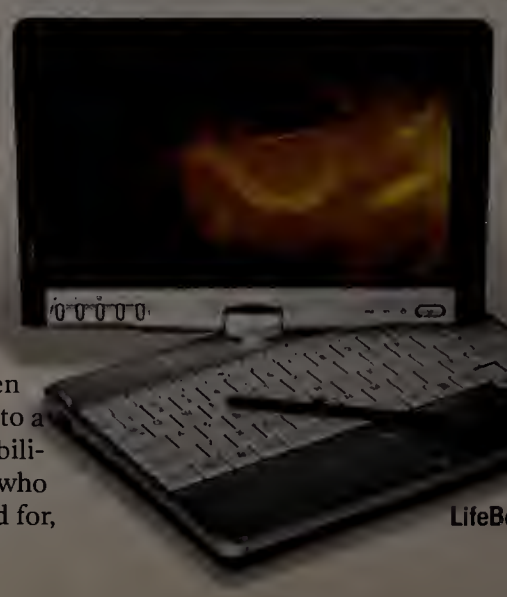
Fujitsu Computer Systems Corp. today will announce a notebook PC that weighs just 2.2 lb. and can be converted into a tablet device with touch-screen and handwriting-recognition capabilities. The format is designed to appeal to users in health care and other vertical industries.

The new LifeBook P1500 will replace the P1000 model, of which more than 200,000 units have been sold globally over the past four years, said Paul Moore, director of mobile product marketing at Fujitsu's U.S. headquarters in Sunnyvale, Calif.

Although the P1500 will first ship with Windows XP Professional, Fujitsu plans to also make it available with Microsoft Corp.'s Tablet PC Edition operating system by year's end, Moore said. The new model, which has a list price of $1,499, is based on a 1.2-GHz Pentium M processor and includes an 8.9-in. screen.

The older LifeBook opens like a typical notebook PC, but the P1500 can be flipped open and swiveled to convert to a tablet format. That capability is something doctors who use the P1000 have asked for, said C.A. Nix, president of Medical Practice Technologies LLC, a Cumming, Ga.-based systems integrator.

Tablet PC technology, which was introduced in late 2002, has largely remained a niche product. "Microsoft had much higher expectations for Tablet PC than materialized," said Brian O'Rourke, an analyst at In-Stat in Scottsdale, Ariz.



Fujitsu's LifeBook P1500

Nonetheless, the market for Tablet PC devices hit $1.2 billion in total sales last year, said O'Rourke. He predicted that sales will rise to $5.4 billion in 2009, as average prices for tablet devices drop well below $2,000 and more applications become available for them.

O'Rourke and other analysts said there already are a couple of ultraportable notebooks on the market that are similar in size to the P1500 but don't have its tablet capabilities.

Barry Zane, executive vice president of sales at Brandwise SSI Inc., a Lakewood, Colo.-based integrator of sales force applications, said the faster CPU in the P1500 will make it "truly a little computer." Zane noted that the P1000 sometimes takes two to four seconds to load new pages — too slow for some applications.

55994

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GLOBAL DISPATCHES

An International IT News Digest

Oracle to Buy 61% of Banking App Vendor

ORACLE CORP. announced last week that it will buy a majority stake in banking software vendor i-Flex Solutions Ltd., continuing a string of acquisitions designed to strengthen Oracle's applications business in vertical industries.

Oracle plans to acquire 61% of Mumbai, India-based i-Flex's stock — 41% from Citigroup Inc.'s venture capital unit and 20% from public shareholders — by year's end. The total value of the deal is expected to be about $909 million (U.S.), said Greg Maffei, Oracle's chief financial officer.

The i-Flex deal follows acquisitions of software vendors Retek Inc. and ProfitLogic Inc., which both focus on the retail industry [QuickLink 55409]. Oracle took control of Minneapolis-based Retek in April after outbidding SAP AG, and it bought Cambridge, Mass.-based ProfitLogic last month.

I-Flex provides software and services to 575 banks in 115 countries and has more than 4,700 employees. Oracle said i-Flex had revenue of $261 million in the fiscal year that ended March 31, up 42% from the year before, and it earned net income of $46 million. The company was founded in 1992 with venture capital from Citigroup, which is its largest customer.

■ JAMES NICCOLAI AND JOHN RIBEIRO, IDG NEWS SERVICE

GLOBAL FACT

32M

Number of corporate employees in Western Europe expected to be using a voice-over-IP system by 2010.

SOURCE: ANALYSYS RESEARCH LTD., CAMBRIDGE, ENGLAND

Sun Chooses Scotland For Remote Management

SUN MICROSYSTEMS INC. will open a data center in Linlithgow, Scotland, in the next few months to remotely manage European customers' computer systems, a Sun executive said in an interview last week. Don Grantham, executive vice president of Sun Services, said the move builds on Sun's acquisition last November of Ashburn, Va.-based SevenSpace Inc., which specializes in remote management and monitoring of IT systems and applications [QuickLink 51122]. Sun now manages data centers belonging to more than 100 customers from SevenSpace's facilities, Grantham said.

The company is seeing very strong growth in both its managed and preventive services operations, according to Grantham. Depending on the success of the European data center, Sun may open a similar facility in Bangalore, India, or Beijing to serve Asia-Pacific customers, he said.

■ CHINA MARTENS, IDG NEWS SERVICE

Aussie Utility Starts Radio-over-IP Network

SYDNEY

COUNTRY ENERGY, a Sydney-based electric utility owned by the New South Wales state government, is implementing a radio-over-IP (RoIP) system so field workers using radios can connect to the utility's IP phones and external telephone numbers via an existing IP network.

Cerulean Solutions Ltd., which is implementing the system, said last week that it expects to finish the RoIP project by year's end. The IBM-owned company is installing radio-enabled gateway routers at base stations, repeaters and dispatch consoles to convert standard radio voice signals into Real-Time Transport Protocol packets suitable for the IP network. **55982**

■ SANDRA ROSSI, COMPUTERWORLD AUSTRALIA

Compiled by Mitch Betts.

Briefly Noted

Infosys Technologies Ltd., India's second-largest software and services outscurcing vendor, said last week that in January it plans to open a $10 million (U.S.) software development campus in Shanghai with room for 1,000 workers. Bangalore-based Infosys already has another Shanghai center that employs 250 people.

■ JOHN RIBEIRO, IDG NEWS SERVICE

Sheffield Hallam University in Sheffield, England, next month will begin a new master's degree program for information security management, in conjunction with the British Standards Institution (BSI). The program will include hands-on practical experience and training on BS7799, the BSI's standard for information security management.

The Bank of China (Hong Kong) Ltd. has awarded Unisys Corp. a contract to build a digital imaging system that will replace the bank's microfilm machines for document processing. Unisys said late last month that the new system is expected to scan, index and archive 400,000 documents per day.

IBM Starts Rollout of Network Appliance's NAS Boxes

Vendor adds low-end device now, plans wider storage offering in fourth quarter

BY LUCAS MEARIAN

New storage partners IBM and Network Appliance Inc. last week struck against the rival team of EMC Corp. and Dell Inc., with IBM introducing a rebranded version of a low-end network-attached storage device that's made by NetApp.

IBM is aiming the NAS box, which it is marketing as the TotalStorage N3700, at businesses with up to 1,000 employees and at the remote offices of larger companies. The rebranded NetApp FAS270 supports file-level data transfers and block-level transfers done via the Internet SCSI protocol, which is most widely used to consolidate backups from farms of Wintel servers.

The two companies, which announced their partnership in April, also said last week that IBM will introduce an expanded product line based on NetApp's hardware during this year's fourth quarter and phase out its own NAS Gateway 500 device by year's end.

Nirav Merchant, director of IT at Arizona Research Laboratories in Tucson, currently runs a NAS Gateway 500. Merchant said he likes the idea of the IBM/NetApp alliance because it will offer him access to NetApp's technology under IBM's service and support.

"I think it's a good move in the right direction," Merchant said. He added, though, that he doesn't plan to make any additional NAS purchases for the next 12 months or so.

Similar Partnerships

Stanley Zaffos, an analyst at Gartner Inc., said the similarities between the EMC/Dell and IBM/NetApp partnerships are striking. IBM and NetApp teamed up because they thought that together they could gain market share from EMC and Dell faster than they could independently, he said.

"That's the same assumption that provided the underpinnings of the EMC/Dell relationship," Zaffos noted.

IBM has made a number of false starts in the NAS market, including the rollout of the NAS Gateway 500, which was introduced early last year but never took off with users, according to analysts.

"In the absence of [IBM] doing something themselves, which they've demonstrated over the last five to seven years they couldn't do, this is a strong second," said Arun Taneja, an analyst at The Taneja Group in Hopkinton, Mass.

IBM's TotalStorage N3700

The N3700 is due to ship late this month. It starts at a list price of $50,000, which includes 14 disk drives with a total storage capacity of 1TB. The device can be scaled up to a maximum raw capacity of 16.8TB, IBM said.

Meanwhile, EMC last week provided details about a series of additions and upgrades it is making to its Clariion line of midrange disk arrays, which Dell has been selling and in some cases manufacturing since 2002.

EMC announced four Clariion "disk libraries" for data archiving and upgraded the product line's internal architecture from a Fibre Channel arbitrated loop to a point-to-point architecture in an effort to alleviate bottleneck issues when two disks request the same data. **56011**

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Continued from page 1

IM Security

based provider of technology risk management and other professional services.

"We never had the comfort level that we could scan instant messages appropriately," Robertson said. Another factor that contributed to the decision to disable the IM system last year is that many of the company's employees work at client locations, he added. Executives from Jefferson Wells didn't want to run the risk of having a virus or worm infect a customer's network.

Jefferson Wells is a subsidiary of Manpower Inc. The decision to unplug IM was made as part of the unit's evaluation of whether its IT controls met the provisions of Sarbanes-Oxley, said John Rostern, New York-based director of technology risk management at Jefferson Wells.

Since the system was disabled, the company's IT staff hasn't bothered to evaluate the available IM security tools because it isn't being pushed by workers to re-establish IM, Robertson said.

Steve Ross, a director at Deloitte & Touche LLP in New York and a past president of the Information Systems Audit and Control Association, said he knows of two Deloitte clients that have disabled their IM systems because of Sarbanes-Oxley concerns. Ross declined to identify the companies, saying only that one is a services company in the southern U.S. and the other is a large New York-based insurer.

Other corporate users are taking steps to strengthen the data security and archiving capabilities of their IM systems in order to satisfy Sarbanes-Oxley's requirements.

> **"We never had the comfort level that we could scan instant messages appropriately."**
>
> SCOTT ROBERTSON, MANAGER OF CORPORATE IT OPERATIONS, JEFFERSON WELLS INTERNATIONAL

> **"Sarbanes-Oxley is a wonderful vehicle for taking things out of people's hands."**
>
> GREG HEDGES, MANAGING DIRECTOR OF TECHNOLOGY RISK, PROTIVITI INC.

For example, Chevron Corp. is moving to block outside connections to an IM system used within one of its operating units, said Jay White, global information protection architect at the San Ramon, Calif.-based energy company. The expanded effort follows the adoption in June 2003 of controls for maintaining audit records and reducing security risks on the IM system.

"We manage our own IM system internally on our WAN, but the external connections have presented security [issues]," added White, who declined to identify the business unit involved.

Some observers contended that companies are overreacting to Sarbanes-Oxley by disabling IM. "You can't control a phone call, so I don't see what the difference is between IM and a phone call," said Diana McKenzie, chairwoman of the IT group at Chicago-based law firm Neal Gerber Eisenberg LLP. "To me, it's not logical."

Greg Hedges, managing director of technology risk at Protiviti Inc., a Menlo Park, Calif.-based company that provides internal auditing and business-risk consulting services, said some companies have disconnected IM systems under the pretense of complying with Sarbanes-Oxley instead of justifying those actions for business purposes.

"Sarbanes-Oxley is a wonderful vehicle for taking things out of people's hands," said Hedges, who added that some companies have applied the same rationale for disconnecting wireless systems.

But Ross said that viruses embedded in instant messages could cripple networks. "Given that [corporate] management feels the necessary controls haven't been implemented or can't be," he said, "unplugging instant messaging wouldn't be overkill." **56025**

Continued from page 1

Warehouses

tools from GoldenGate Software Inc. to pull information directly from its business systems into the data warehouse, said Jack Garcella, the Salt Lake City-based retailer's vice president of data warehousing, analytics and reporting.

The data warehouse, which is based on NCR Corp.'s Teradata software, will replace a process that used traditional extract, transform and load tools to build reports directly from Overstock's back-end systems. As the retailer grew, the reports stressed the systems and gave employees day-old data, Garcella said. Now the data warehouse receives Web site clickstream data in real time, financial and product-sales data every 15 minutes and other information hourly.

"When we launch campaigns now, we can look within five minutes and see if they are producing lift or revenue that would not normally have happened," Garcella said. "You can't wait until the next day or three hours later to get that data." He declined to specify how much Overstock is spending on the warehousing project, other than to say the cost is in the millions of dollars.

MARTIN LEPIRE/KLIXPIX

HARRAH'S IS TESTING a real-time data warehouse that combines operational and historical customer data, says CIO Tim Stanley.

Harrah's Entertainment Inc. is testing a real-time data warehouse that combines operational and historical customer data, said Tim Stanley, the Las Vegas-based gaming company's CIO.

The new setup is based on an architecture that Harrah's developed in mid-2002. The company is using adapters from Tibco Software Inc. to feed information from transactional systems into its Teradata warehouse to help workers interact with customers at Harrah's properties, on the phone or on the Harrah's Web site.

. "It uses Teradata's transactional database and also has direct access to all the historical data," Stanley said. "You don't have to have two databases talk to each other."

Changing Needs

Eric Rogge, an analyst at Ventana Research Inc. in San Mateo, Calif., said that because business intelligence tools are being used more often for operational decision-making, many companies are finding that they need to refresh their data warehouses more frequently than on a nightly basis.

"It's not about loading a data warehouse so a small department of business analysts can forecast two years out — it's for daily decisions," he said.

For the past 18 months, Avnet Electronics Marketing has been using a near-real-time data warehouse that captures orders and updates of logistics data from its back-end system every 15 minutes, said Kevin Harrington, director of IT delivery for global information solutions at the Phoenix-based electronics distributor.

Avnet uses tools from Informatica Corp. to move the data into the warehouse. Because of the integration infrastructure, it took only 24 hours in late July to begin populating the warehouse with order and customer information from a company that Avnet recently acquired, Harrington said.

But not all users find they need real-time data warehouses. Merial Ltd., which makes medications for pets and livestock, last year ditched efforts to create a real-time system for updating sales and inventory data from its 33 ERP systems worldwide. Although some divisions updated invoicing information daily, others did so only weekly or at the end of the month, said Steve Lerner, director of information systems, global finance applications and integration at Duluth, Ga.-based Merial.

In the end, the company decided to use data warehousing tools from Kalido to pull data from its ERP systems once a week. "The consensus among the business users was that there was no way they were prepared to make business decisions based on sales other than on a weekly basis," Lerner said. **56021**

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Correction

LAST WEEK'S cover story on the risks involved in transporting data backup and archive tapes to external storage facilities ("Lost, Stolen or Strayed") incorrectly spelled the name of Minneapolis-based Xcel Energy Inc.

IN THE "Ask a Premier 100 IT Leader" item on the Career Watch page in last week's issue, Gilles Bouchard was incorrectly identified as Hewlett-Packard Co.'s CIO. Bouchard was CIO and executive vice president of operations at HP until July 11, when the company announced that it was separating those jobs and named former Dell Inc. CIO Randall Mott to run IT. Bouchard remains in charge of HP's supply chain operations.

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☐ CAN OUR PEOPLE MANAGE IT

☐ WILL IT LOWER TCO

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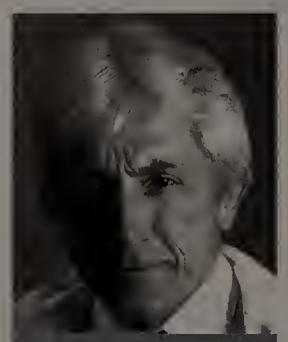
DON TENNANT

Changing of the Guard

AS YOU WERE THUMBING through last week's issue, or scanning the news stories on our Web site, you may well have glossed over a story that the more I think about it, the more I'm convinced is one you really should have read.



DON TENNANT is editor in chief of *Computerworld*. You can contact him at don_tennant@computerworld.com.

I'm referring to Thomas Hoffman's story titled "School System Uses Governance Apps to Stretch IT Staff" [QuickLink 55842]. No, I'm not kidding. Yes, you need to care what the public school system in Chicago is doing with IT governance and portfolio management. Why? Because the school system is taking a hosted-applications approach to the problem, and that's saving it $200,000 a year.

Yeah, I know, $200k is a rounding error in your IT budget. The point is, those savings scale, big time. And if you haven't already done so, you need to start thinking about how you're going to offload some of those overpriced business apps that you're paying a fortune to maintain in-house.

Last week, I had an intriguing discussion with Greg Gianforte, founder and CEO of RightNow Technologies, an on-demand CRM vendor that does 40% of its business with companies with revenue of more than $1 billion. You can go to RightNow's Web site (*www.rightnow.com*) and read the testimonials from market research firms and from large corporations that are saving obscene amounts of money by taking the hosted-applications route. But just to give you an idea, Audiovox says it saved more than $2.7 million over three years, with an independently audited ROI of 1,989%. Talk about reducing your overhead.

So when savings of this magnitude are at stake, why isn't the on-demand, software-as-a-service model more widely adopted than it is? Gianforte makes a very compelling argument that it all has to do with the fact that it's nearly impossible for traditional "on-premise" software vendors to offer the hosted option. These are the reasons he gives:

■ The software has to be rewritten for "multitenancy" so that hundreds or thousands of clients can share a common IT infrastructure.

■ "The whole ecosystem consists of systems integrators that are parasites that feed on the complexity of the applications." For traditional software vendors to really embrace this model, they'd have to alienate their existing partners.

■ The on-demand approach is a pay-as-you-go model. The difficulty here is that "when you're used to getting all of your money upfront, it's hard to make the transition to this model and keep Wall Street happy."

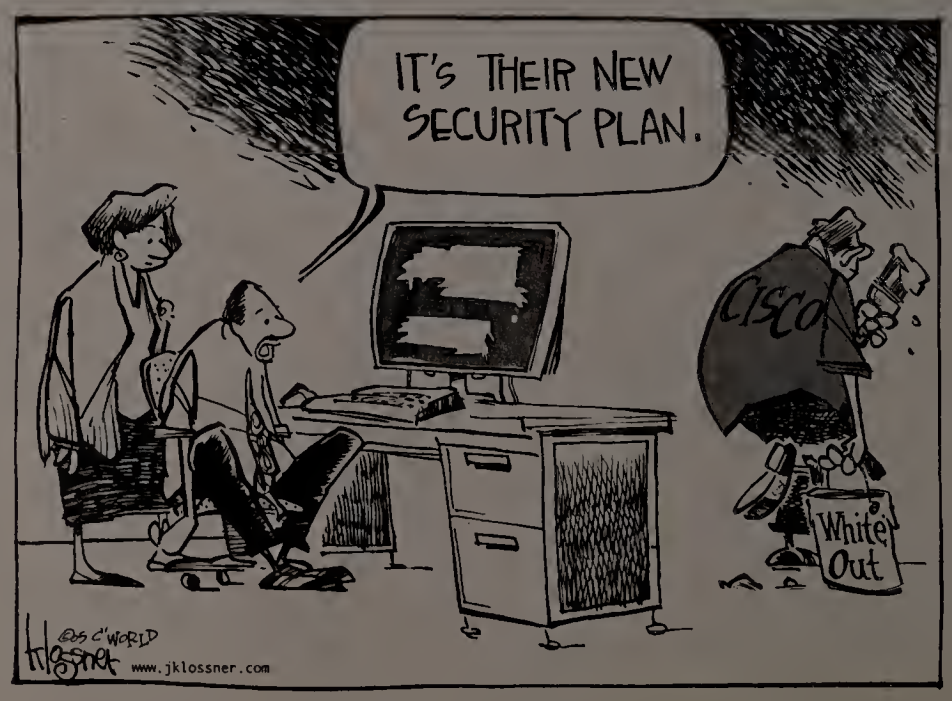
■ When you get paid along the way, if you're not making the customer happy, you don't get the renewal. "I'd hate to think what SAP's or Siebel's renewal rates would be if it was dependent on the success of their deployments."

What this means is that we're likely to see more and more start-ups offering Web-based, on-demand services. A perfect example is the venture being pursued by Damien Bean, a *Computerworld* Premier 100 IT Leader and former vice president of corporate systems at Hilton Hotels. Bean left Hilton to start CareerCurrency (*www.careercurrency.com*), an outfit that hosts e-learning applications for corporate customers.

"I'm certain that the days of large IT departments being responsible for all of an organization's data management needs are over," Bean told me last week. "Information service providers can offer far greater focus and capacity at a cost structure that is a fraction of that required to maintain systems internally."

Consequently, Gianforte says, "there's going to be a changing of the guard of primary vendors who supply enterprise applications." I, for one, salute the very thought. **55990**

Don Tennant



JULIE SILVERSTEIN

Keeping User Groups Vital

A FEW WEEKS AGO, Interex, one of four Hewlett-Packard technology user groups, shut itself down. This is a good time, then, to examine what user groups need to do to deliver sustained value to their key stakeholders — their members and vendors — and how they can remain strong and relevant. SmithBucklin recently conducted interview-based research to understand fully the answers to those questions.

For vendors, user groups offer tangible, quantifiable benefits. Vendors say user groups help them reduce the cost of communicating key messages to users, minimize technical support expenses, generate sales leads, strengthen inroads with business partners, and create efficiencies in capturing market feedback, product evaluations and competitive input.

Equally important are less tangible benefits. Vendors place an enormous value on user groups for the unique customer mind-share they create and the relationships they foster. This translates into more loyal customers and opportunities for additional sales.

To remain successful, user groups must also deliver sustained value to their members. For example, they provide intimate access to the leading minds, technology and information in the industry, exposing members to critical business solutions and technologies that can save their companies money. Effective user groups repurpose this content on an ongoing basis, creating a year-round community that doesn't rely solely on face-to-face gatherings to deliver value.

Our research shows that the benefits received by members — for both the companies they represent and for themselves — should be greater than their investment of time and money in the user group. Strong groups follow this rule. To do this, they must continually ask their members to assess the

value they are deriving from their membership and be willing to change their offerings in response to this input. In addition, user groups must communicate their value propositions to members at every opportunity.

User groups must also learn to identify and avoid certain pitfalls. Those with weak vendor relationships either fail or end up continuously struggling through unfocused and sometimes adversarial relationships with their vendor. On the other side of the equation, if a vendor's primary approach to these groups is reactive rather than one of driving initiatives through the user group community, that vendor is in danger of fostering a negative relationship. Effective user groups take the lead in building positive relationships.

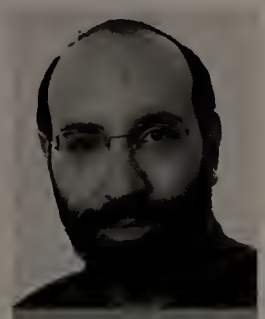
Strong user groups are — and will continue to be — a vital industry force, consistently delivering significant value to their stakeholders. For example, the McKesson Corp. health care user group, InSight, created a new type of vendor partnership involving four key McKesson partners — Oracle, Dell, Intel and SearchAmerica. Called V3, the partnership gives InSight members a unique look into technologies the four companies bring to large-scale McKesson implementations. Another example is the Americas' SAP Users' Group, which created an online member resource called Year-Round Community that fosters ongoing communication among members and serves as an excellent way to deliver programs, services and vital content.

In an ever-changing industry filled with marketplace uncertainty and mounting economic pressures, the value these groups provide has managed to remain one of the few constants. The trick is to make sure that the winning equation of user groups is in place. Committed vendors working with committed users will yield maximum value for all involved. **55899**

MICHAEL GARTENBERG

These Are The Days, My Friend

THE POET Robert Frost wrote, "Why abandon a belief merely because it ceases to be true?" A few months back, I talked about things I missed about older products ["There's a Scarcity of Great Stuff," QuickLink 54487]. Sometimes I find myself sounding a lot like my dad romanticizing the good old days. But after giving it a little thought, I have to admit that the good old days weren't always so good, and what we've got now isn't bad. Let's look at a few things, then and now.



MICHAEL GARTENBERG is vice president and research director for the Personal Technology & Access and Custom Research groups at Jupiter Research in New York. Contact him at **mgartenberg2@optonline.net**. His weblog and RSS feed are at **http://weblogs.jupiterresearch.com/analysts/gartenberg.**

My desktop PC: Ten years ago, I was using a 133-MHz Pentium, with 16MB of RAM, a 250MB hard disk and an SVGA monitor. It did productivity applications pretty well, but that's about it. Today, I use a 3-GHz P4 with 1GB of RAM and 200GB of hard-disk space connected to a 42-in. display. It can do productivity applications, but it also records all my TV shows and holds my entire music collection and every photo I've taken since 1995.

My laptop: In 1995, I used a PowerBook 540c. It was a pretty heavy computer, had a floppy drive and got about an hour of battery life. It connected me on the road if I was near a phone jack or an Ethernet connection. The ThinkPad I'm using today gets six hours of battery life, connects if there's a phone or Ethernet and uses Wi-Fi or EV-DO if there's not. It has enough disk space to keep all my work as well as my music collection and a few videos to watch on the road. It also weighs less than 4 pounds.

My PDA: Ten years ago, I used a Newton from Apple. It had a great operating system but was bulky, ran down AA batteries quickly and couldn't synchronize with my PC to keep my contacts and calendar. My PDA today is a Palm LifeDrive that has 4GB of storage. It syncs not only my calendar and contact information, but also every business document on my PC, and it has copies of every picture on my computer formatted for its screen and a few hundred songs to listen to. It also lets me play an arcade-perfect version of Pac-Man.

My phone: My bulky cell phone 10 years ago had to go in my laptop bag. It let me talk for about an hour, if I was lucky enough to get reception. Today, my smart phone is tiny and fits in my pocket. It carries a copy of my contacts and calendar and can even be used for e-mail triage. It gets more than four hours of talk time and works in most parts of the world.

I could go on. I could talk about servers then and now or digital cameras. In just about any category you can think of, we've benefited from the indefatigable effects of Moore's Law, and the result is that every digital device we use is simply better, faster, bigger where it counts, smaller when that helps and more powerful than it was just a few years ago. That has enabled us to do more, though it has added complexity.

Yes, sometimes I still feel nostalgia for the good old days, but then I use my Bluetooth-enabled car to reroute my calls automatically or a high-speed EV-DO connection from my laptop to watch and control the TiVo in my den when I'm stuck at the airport. The feeling of nostalgia passes quickly. **55798**

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READERS' LETTERS

CEO's Absence at HP Event Not So Absurd

I DON'T find it odd that new HP CEO Mark Hurd won't be attending his own event ["No Hurd? Absurd," QuickLink 55548]. After all, he is relatively new to HP, and he doesn't have an understanding of the historical background.

HP and its customers had, for many years, a very strong level of commitment and cooperation. The user conferences, local meetings and SIG meetings were all aimed at getting feedback from the *user* community. This doesn't seem to be the case anymore. Macworld and Oracle OpenWorld are just about showcasing new products. The vendors have been working toward changing the way we purchase and the needs we have; computers, software and peripherals are commodities. The real money is in services. I miss the old days when John Young and Dave Packard would stroll through the room and chat with us customers. I shared many a conversation with people from HP Labs and was able to do more with the resources I invested in. So, Messrs. Hurd, Jobs, Dell and the rest: Thanks for not listening to us anymore; we're just the consumer.

John T. Monaghan
Vice president of IT, Marnell Corrao Associates, Las Vegas, jmonaghan@marnellcorrao.com

AS A long-standing member of Interex who has attended various conferences, beginning with the one in Anaheim in 1984, I was disappointed that the then-CEO of HP, John Young, wasn't at my first Interex/HP World Conference.

During the following 21 years, the CEO was not always in attendance. In fact, Carly Fiorina declined to attend the 2000 event, even though she was in New York the day the conference opened. It was the day HP unveiled the SuperDome, and the press and Wall Street were well served. Fiorina did attend the Chicago 2001 and Atlanta 2003 conferences, albeit for only the keynote speech and a quick walk through the exhibit area. In 1999, both Fiorina and the outgoing CEO, Lew Platt, attended the annual conference. During that conference, I was a volunteer leader for Interex, serving as the chair of the High Availability Forum, and got to spend time with both HP leaders. I too hope that Mark Hurd will reconsider and attend the HP Technology event, even though I will not be able to do so.

Chuck Ciesinski
HP-UX architect, Board member, OpenMPE, Germantown, Md.

IT Must Help Make People Less Useless

THAT great article ["The Truth About 'Useless' People," QuickLink 55069] reminds us what our true purpose is in the IT realm – to educate, to foster technical growth and to mentor our peers through leadership. We cannot forget for one second that not everyone might understand technospeak as we try to explain "simple" issues to the masses.

Christian Markley
IT trainer, T.H. Properties, Harleysville, Pa., Christian.Markley@thproperties.com

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 1 Speen Street, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

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TECHNOLOGY

QUICKSTUDY
Markup Languages
These languages use sets of embedded tags or labels to characterize text elements within a document and thereby indicate their appearance, function, meaning or context. **Page 30**

SECURITY MANAGER'S JOURNAL
Dealing With an ISO Who's Only So-So
C.J. Kelly confronts her agency's information security officer, who's weak in most technical areas. **Page 32**

OPINION
Time for a New View Of Data Management
Curt A. Monash says that database management is in crisis and the only way out is a radically different view of data management. **Page 36**

RICHARD DOWNS

TARGETING THE ENEMY Within

Insider security risks grow as partners and suppliers increasingly have access to corporate networks. Here's what companies are doing about the threat.
By Jaikumar Vijayan

THE FEAR OF corporate data being stolen or accidentally leaked by insiders is what keeps Andreas Wuchner-Bruhl awake at night.

Detecting and stopping such leaks is an enormous challenge, especially for large companies with widely distributed data stores and networks, says Wuchner-Bruhl, head of global IT security at Novartis Pharma AG, a $25 billion drug maker in Basel, Switzerland.

These days, the problem is even tougher because it's no longer just the disgruntled or malicious employee who poses the internal threat, says Wuchner-Bruhl. It's also the careless user, the outside hacker posing as a trusted user and others with inside access to enterprise networks, such as suppliers, partners and service providers.

As a result, companies must take a fresh look at the scope of the insider threat and figure out what new technology, processes and administrative controls they need to implement to deal with it, says Wuchner-Bruhl. "Security people like to give the impression that things are under control," he says. "But the fact is, there are so many things we don't even begin know" about internal threats.

Wuchner-Bruhl is among a growing number of security managers who are looking to see what new controls are needed at a time when internal attacks on corporate information systems are increasing. In fact, at many of the world's largest financial services companies, such attacks have already surpassed external attacks, according to Deloitte Touche Tohmatsu's June report on its 2005 Global Security Survey. In the survey of Fortune 100 companies, 34% of the respondents said they had experienced internal attacks in the past 12 months, compared with 14% in 2004. In contrast, only 26% reported external attacks in the past 12 months.

"Insider attacks are the most difficult to catch because these are legitimate users using their legitimate access for inappropriate

Continued on page 26

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Senior Manager, *Nissan Motor Company, Ltd.*

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purposes," says Pete Lindstrom, an analyst at Spire Security LLC in Malvern, Pa. "They tend to have the highest impact, since they are insiders with access and they know where the valuable information is."

Know the Enemy

Understanding that it's not just the disgruntled employee who poses the insider risk is a good place to start addressing the problem, says Jonathan Bingham, president and chief technology officer at Intrusic Inc., a Waltham, Mass.-based security products vendor.

Very often, the more sophisticated inside attacks are launched by outsiders who have stolen legitimate user credentials and then use them to gain access to high-value targets, says Bingham. For example, selectively planted Trojan horse programs were used to collect the usernames and passwords of highly privileged users at more than 300 critical infrastructure companies in the U.K. earlier this year. The credentials were then used by hackers to gain access to high-value systems. Because such targeted attacks generate much less traffic than mass attacks, they are harder to detect using traditional antivirus and e-mail filtering tools, users say (see related story, QuickLink 55220).

The growing interconnectedness of enterprise networks also means it's not just the employee who has access to internal assets. "We can have a situation where a guy who has legitimate access for a day can plant a back door on our systems and log in at will later," says Jeff Nigriny, chief security officer at Exostar Inc., a business-to-business portal for the aerospace industry in Herndon, Va.

Detecting the telltale signs of such activity requires a deeper analysis of network traffic and behavior than most traditional security technologies provide, Nigriny says.

Nigriny's company is using a hardware appliance from Intrusic called Zephon to analyze network traffic at the packet, session, host and environment levels. Such monitoring allows companies like Exostar to identify suspicious internal network activity such as data flows going in the wrong direction, servers consuming data instead of producing it and computers communicating with one another where no such communication existed previously, Bingham says.

Malicious insiders use network resources in subtly different ways from normal users. Intrusic's tool is designed to detect such "illegal movement of a sophisticated individual within a network," Bingham says.

"It looks for things down at the Level 2 and Level 3 layers. It doesn't care what the application is," says Nigriny. The tool can be used to identify issues as varied as a misconfigured firewall, an employee downloading porn or someone attempting to upload confidential data to an external server in an HTTP stream, he says.

What's Going Out

Network egress filtering is another way of finding out whether protected data is leaving corporate boundaries in an illegal fashion, says Jeff Karafa, chief financial officer at Community Bank of Dearborn in Michigan.

The bank uses a hardware appliance from Reconnex Inc. in Mountain View, Calif., to examine outgoing corporate e-mail, Web mail, instant messages and Web posts for confidential data such as customer account numbers.

Like other products in its class, Reconnex's iGuard technology uses a combination of exact data matching, contextual analysis and policy information to alert administrators when specific pieces of protected information traverse the network. Such alerts can be useful in identifying both malicious leaks and accidental ones — such as an employee sending a file containing confidential information to his personal e-mail account so he can work on it at home.

The amount of data that trickles out in such fashion can be surprising, Karafa says. "We thought we were doing pretty well on our own" in detecting such leaks, he says. But then the bank tested Reconnex's egress-filtering tool and noticed how much sensitive information was slipping out, often as a result of employees making mistakes. In one case, an employee was found to be sending customer account information to a former worker and was promptly fired, Karafa says.

"When that data was presented to us, it was something of an eye-opener," says Karafa, who also uses the Reconnex tool to monitor the Web surfing habits of employees.

But content-monitoring tools don't always scale well and are of limited use in environments where network traffic is encrypted, says Wuchner-Bruhl. He is considering using digital rights management technologies to tag confidential data and intellectual property in order to control how it is accessed and used. DRM tools, which are available from vendors such as Microsoft Corp., Authentica Inc. and Liquid Machines Inc., are designed to let companies track how data is used and prevent employees who don't have the right privileges from doing things like reading, altering, copying, printing and forwarding data.

For the Money

Financial motives appear to be a primary driver in a growing number of insider attacks, says Bingham. One example of that trend is the theft of information on about 60,000 Bank of America Corp. customers by a New Jersey-based data-theft ring that had also stolen information from three other banks — Wachovia Corp., Commerce Bancorp Inc. and PNC Bank NA [QuickLink 54542]. The ring's members included seven former employees from across the four banks.

Most such inside attacks are planned in advance and can be prevented if the right controls are in place, according to a report released in May by the U.S. Secret Service and Carnegie Mellon University's CERT Coordination Center. Good configuration management practices, for instance, allow companies to identify unauthorized changes to software or the creation of unauthorized remote-access accounts, both of which could portend trouble, the report says. Segregating the duties of systems administrators and privileged users is another way of ensuring that a single person doesn't have unbridled access to network resources, according to the report.

It's also important to have the right processes in place for disabling network access when employees are terminated, notes the report, which is based on an investigation of 49 cases of insider attacks via computer systems in critical infrastructure sectors between 1996 and 2002.

Many inside attacks continue to be the work of disgruntled employees and former workers who still have access to corporate systems after they leave, according to the CERT report.

In many cases, the triggers for such attacks are negative work-related incidents that could be addressed via formal human resources processes for handling employee grievances, and by reporting suspicious behavior, the report says.

Companies need to use access control and account provisioning tools to identify and close the "orphan accounts" that are left behind when employees leave or are terminated. The failure to close such accounts gives former employees an entry into the corporate network.

Training, user awareness and administrative measures are perhaps as im-

ATTACKS ARE EASY, Too Easy

that can result from an insider attack, carrying one out doesn't always take a lot of technological savvy, according to security experts.

Most of the more traditional attacks involving disgruntled employees result from companies failing to shut down network access privileges after an employee has been terminated or has left the company, according to a report released in May by the U.S. Secret Service and the CERT Coordination Center.

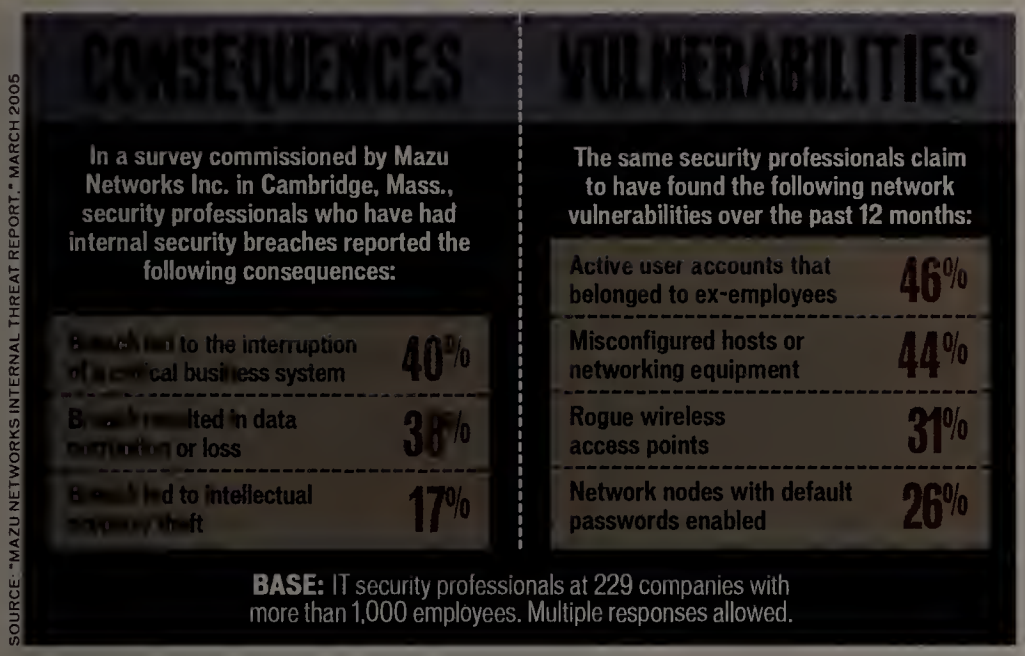
In the 49 incidents studied, the insiders were often systems administrators or privileged users who knew their way around their network and already had a good idea of where the important information was. So there often was little need for scanning activity or sophisticated programming to access key data.

Many times, the attacks take advantage of process holes – such as a failure to vet who has access to critical information – rather than technological ones, according to security experts.

Even the relatively sophisticated attacks by outsiders posing as trusted insiders rely heavily on human factors to succeed. Many such attacks use phishing and pharming methods to get unsuspecting users to part with network credentials that are then used to gain access to high-value targets.

There are also many fairly straightforward ways that data can be taken out of enterprises without anyone's knowledge, says Andreas Wuchner-Bruhl, head of global IT security at drug maker Novartis Pharma. They include using file transfers, sending data in e-mail attachments and uploading data to remote systems. The ubiquity of high-capacity small-format storage devices such as USB fobs, writable CDs and handheld devices makes it easy for people to download large amounts of data and simply walk away with it with very little traceability, Wuchner-Bruhl says.

– Jaikumar Vijayan



portant as technology when it comes to dealing with insider risks, says Kim Milford, information security manager at the University of Rochester in New York.

Outside hackers are increasingly using social engineering methods, such as spoofed e-mails and Web sites, to lure people into disclosing sensitive information and user credentials. These so-called phishing and pharming exploits are now among the top security concerns of the financial companies in the Deloitte survey.

The efficacy of such methods on untrained users can be alarming, says Jason Jones, a webmaster at a private university in Texas that he asked not be named. In a test earlier this year, Jones and his team managed to harvest authentication credentials from over 90% of targeted individuals by using spoofed e-mail and Web pages designed to look as though they were from the university's IT security team.

Educating and training employees about such issues is key, Milford says. It's also vital that employees know security policies and the consequences of misusing corporate data and network resources, says Wuchner-Bruhl.

Technological measures are important as well, Milford says. Among those Milford has found useful are controls that enforce least privilege rules, meaning they give users no more access than they need. She also likes tools that use IP restrictions to limit access to protected information and keep logs for monitoring unsuccessful application access attempts.

In addition, Milford advocates the use of a what she calls a "carrot-and-stick policy" to induce good security practices. The stick could be a comprehensive policy with strong enforcement, she says. The carrot could take the form of incentives for completing security training, such as job reclassification, merit raises, bonuses and increased opportunities for career development, Milford says. Empowering staffers at all levels of the organization to learn about security and take steps to guard organizational resources in their power is also key, she says.

"Education, empowerment and enforcement are probably the most critical ways to create a climate of security for administrators and users," Milford says. "Utilizing and reinforcing the message that everyone has a responsibility for information security is important." **55809**

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Case Study: Acxiom Corp.

HOMEGROWN Grid

A grid project slices delivery times for records data and cuts hardware costs by 86%. By Mary K. Pratt

KELLY QUINN

Acxiom's Charles D. Morgan, Alex Dietz and Terry Talley recognized the benefits that could be gleaned from a grid computing system, among them, faster record processing for quicker delivery to clients.

ACXIOM CORP. processes billions of records every month, culling from sources like customer-prospect lists, phone records and retail store sales to generate usable consumer data for its business clients.

The high volume was impressive, but company officials wanted to process even more — quicker and cheaper, too.

"We decided there had to be a better way," says Charles C. Howland, grid infrastructure group leader.

So tech workers developed the Customer Information Infrastructure (CII), winner of a 2005 *Computerworld* Honors award. This grid environment allows Acxiom to handle a higher data volume faster and with less-costly equipment.

Consider, for example, that it often took more than three months to update Acxiom's InfoBase database; on the grid, it takes three days. "We would not be able to run our business the way we do today without this capability," says Alex Dietz, leader of the Acxiom solutions infrastructure organization.

Acxiom had managed most data using IBM mainframes running MVS until 1995, when it moved its internal processes and clients' applications to symmetrical multiprocessing platforms. Although SMP technology was more powerful and cost-effective, Acxiom still spent more than $150 million annually for capital equipment to maintain its capability.

But Acxiom staffers were already at work developing a high-performance application called AbiliTec to link and clean information on individual consumers gleaned from multiple data sources. Acxiom matches every name and address it receives from clients against its in-house AbiliTec reference base of 20 billion records. More than 40 billion records are linked each month.

The application worked well, but Acxiom needed 20 environments with Unix SMP supporting AbiliTec to handle the processing load. It was expensive and still not fast enough, says Terry Talley, a senior technical adviser based in Conway, Ark.

Payback Potential

So in 2000, a research team set out to find a better way, pinning its hopes on grid technology. Dietz credits Talley with the plan: "He came to us with the idea of wiring together a bunch of PCs, and he proved it would work."

Talley says he spread applications over multiple machines "instead of using one big machine. We were much faster, and the incremental cost to do one record was significantly lower than our previous implementation."

The team of eight to 10 tech workers worked on and demonstrated the grid computer project to CEO Charles D. Morgan in the summer of 2001.

"He said, 'This is great. Go do it to all of the Acxiom products,' " Talley recalls.

Acxiom's use of grid technology makes the company a leader in this area, says Ahmar Abbas, an analyst at Grid Technology Partners in South Hadley, Mass., and author of *Grid Computing: A Practical Guide to Technology and Applications* (Delmar Thomson Learning, 2003). As for the technology's impact on Acxiom's performance, he says, anything workers can do to make processes run better, cheaper and faster "is going to have a direct impact on the services they offer and the money they can generate."

COMPUTERWORLD HONORS SPOTLIGHT

John Ripa, group leader for Acxiom data products, says the impact of the new technology is significant.

He points to one of the company's products, InfoBase Enhancement, as a prime example. A client — a cell phone company, for example — might ask for consumer information to target new customers or to cross-sell to existing ones. The client sends Acxiom millions of its own records, which Acxiom then processes against its database of consumer information to produce the detailed consumer files the cell phone company wants.

Working with the CII grid computing technology, Acxiom improved the speed of its build process by 83%, Ripa says. It increased the speed at which it delivers these files to clients by 77%. "And the reliability improved dramatically. We're as close as we can get to zero downtime," he adds. Equally impressive is an 86% reduction in hardware costs, Ripa says, comparing costs prior to and after implementation.

"This gives our clients the ability to do things rapidly that could never be considered before," Ripa says, adding that companies are willing to pay a premium for that speed.

Talley says the biggest challenge for Acxiom was "dealing with the psychological impact. People are comfortable with paradigms that are old and familiar." The changes required workers "to rethink existing processes and software." Acxiom also had to manage a

ACXIOM AT A GLANCE

The $1.2 billion Little Rock, Ark.-based company has more than 6,000 employees, and 1,850 are IT workers.

Acxiom collects and maintains consumer data from nearly every household in the U.S., which it offers to clients that need addresses, phone numbers and demographic data for their direct-mail and telemarketing efforts.

Champions of the grid computing project: CEO Charles D. Morgan; Alex Dietz, leader of the Acxiom solutions infrastructure organization; senior technical adviser Terry Talley; and development leaders Charles C. Howland, Chad Fitz and Chris Bennett.

Project payback: Company officials wouldn't provide specific ROI figures but said the move to CII and the underlying grid allowed them to handle 22.5% more processing with the same number of workers.

SOURCES: HOOVERS.COM, ACXIOM

large number of computers over the long term.

"We have built a lot of software to address this challenge," Talley says. "It's relatively easy to get a bunch of machines up and running for the first time. It's much more difficult to add to, replace and update those machines over time, and the problem is magnified if you have thousands of nodes."

Lessons Learned

Without a road map to guide them, Acxiom's IT workers had to rely on their own internal resources to compensate for a lack of commercial products. As a result, they built their own resource scheduler, grid control, maintenance interfaces, software distribution functions and grid-enabled data management functions.

Open-source software was used when available; when it wasn't, the IT staff wrote components. Acxiom officials also tapped experts who were developing general-purpose grid products at other companies to confirm that they were on the right path.

The rewards overshadow many of the challenges. Talley points to a demographic enhancement product that took nearly 30 days to run on a large Unix computer; it takes less than one day on the grid version.

"Our grid is all about performance. It's about being able to do things you couldn't do before," Talley says.

In 2003, Acxiom announced that it would host client data and run client processes in the grid environment, too — a strategy that evolved into the architecture known as CII.

CII product leader Ken Archer says the speed, flexibility and scalability of the grid is key to meeting clients' needs.

"A large part of our customer base is financial services, specifically around customer marketing and customer acquisition. And if they can get the data quicker, they can get offers out faster to make those decisions," he says.

Acxiom now has more than 4,000 rack-mounted, two-processor nodes in its data centers that are dedicated to the grid. Each node is a PC-based server running Linux.

Officials won't disclose how much the company has invested in its grid computing project, although they indicate its value is well worth the cost. They cite the case of one large credit card issuer, which had a file of 250 million customer records processed and scored in parallel using both the CII environment and mainframe; the time to completion with CII was 15 hours versus more than 150 hours on the mainframe.

Dietz says Acxiom is still migrating to grid computing, so about half of its work still flows through legacy environments. Says Talley, "We'll have a constant evolution in both size and function over the next few years." **55876**

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Markup Languages

DEFINITION

Markup languages use sets of embedded tags or labels to characterize text elements within a document so as to indicate their appearance, function, meaning or context. Originally used for production within the publishing industry, markup languages have proliferated since the widespread adoption of XML.

BY RUSSELL KAY

IN 1969, three IBM researchers created GML, a formatting language for document publishing. Understood to mean Generalized Markup Language, the letters also happened to be the initials of its creators: Charles Goldfarb, Edward Mosher and Raymond Lorie.

GML allowed text editing and formatting, and it enabled information-retrieval subsystems to share documents. Instead of a simple tagging scheme, however, GML introduced the concept of a formally defined document type containing an explicit hierarchy of structured elements.

Major portions of GML were implemented in mainframe publishing systems, and the language achieved substantial industry acceptance. IBM adopted GML and produces over 90% of its documents with it.

GML was expanded with additional concepts, such as short references, link processes and concurrent document types, into Standard Generalized Markup Language. SGML made inroads in the publishing world, especially at the U.S. Government Printing Office, and it became an international standard in 1986.

Still, SGML was largely unknown until 1990, when Tim Berners-Lee, inventor of the World Wide Web, created Hypertext Markup Language as a subset of SGML. Soon, every type of document and data was being littered with tags at the beginning and end of text elements like this: <tag>and</tag>. Then Extensible Markup Language (XML) came along in the late 1990s, and the IT world hasn't been the same since.

In fact, it seems that hardly a day goes by without a new markup language being announced or described. Indeed, *Computerworld* has published separate QuickStudies on 10 markup languages, and that just scratches the surface. A Google search on "markup language" returns more than 6 million pages.

QUICK STUDY

Thus we present this shorthand guide to current markup languages. It certainly doesn't cover them all, but it does give an idea of the flexibility and power of the concept and how it is being used. Most are simple extensions of XML or document type definitions specialized for a particular area of interest, but some are quite complex.

The Languages

■ **Business Process Execution Language:** BPEL is designed to run a series of Web-based transactions and/or characterize interfaces that are needed to complete Web-based transactions. It's used for modeling business processes, with specifications for transactions and compensating transactions, data flow, messages and scheduled events, business rules, security roles, and exceptions. **QuickLink 54724**

■ **Cell Markup Language:** CellML stores and exchanges computer-based mathematical models, allowing scientists to share models even if they use different model-building software. It also enables them to reuse components from one model in another, thus accelerating model building. CellML includes mathematics and metadata by leveraging existing languages, including MathML. **www.cellml.org**

■ **Chemical Markup Language:** CML is a new approach to managing molecular information that uses recently developed Internet tools such as XML and Java. Based strictly on SGML, it's capable of holding extremely complex information structures and can therefore act as an interchange mechanism or an archiving tool. It interfaces easily with modern database architectures, such as relational or object-oriented. Most important, a large amount of generic XML software to process and transform it is already available from the community. **www.xml-cml.org**

■ **DARPA Agent Markup Language:** XML has a limited ability to describe the relationships between objects. DAML extends XML by using ontologies — explicit formal specifications of how to represent the objects, concepts and other entities in a particular area of interest, along with the relationships among them. **www.daml.org/about.html**

■ **Dynamic Markup Language:** DML is an XML-based language designed specifically for object-based graphics construction and the development of user interfaces. Similar to HTML, it includes extensions that support calculations, argument-passing and variable storage. **www.rocklyte.com/dml**

■ **Directory Services Markup Language:** DSML defines the data content and structure of a directory and maintains it on distributed directories. DSML gives developers a simple and convenient way to implement XML-based applications on the Internet. Such support is crucial to e-commerce applications. **QuickLink a6820**

■ **Financial Products Markup Language:** FPML is a business information exchange standard for electronic trading and processing of financial derivatives instruments. It establishes a protocol for sharing information on and dealing in derivatives and structured products. **www.fpml.org/index.html**

■ **Hypertext Markup Language:** The backbone of the Web, HTML is based on a dialect of GML that was previously used at CERN. Its primary innovation was to allow simple hypertext links from one document to another. **www.w3.org/MarkUp**

■ **Human Markup Language:** HML is part of an effort to provide a framework for the overall human communication process, including areas and

The Nonmarkup MLs

Not every language or acronym ending in "ML" represents a markup language. Here are the best-known exceptions.

■ **ML:** "ML" originally stood for "metalanguage," but it's a general-purpose programming language designed for large projects. There are two main dialects in use today: **Standard ML** (SML; see *www.dcs.ed.ac.uk/home/stg/NOTES*), a mathematically defined version of the language formulated in part by some of the original language developers; and **Objective Caml** (OCaml; see *http://caml.inria.fr/*), an offshoot version from the original ML to which features are added at will without being defined in a standard. Other related languages include **Extended ML** (EML; see *http://homepages.inf.ed.ac.uk/dts/eml*) and **Alice ML** (*www.ps.uni-sb.de/alice*).

ML and its variants are purely functional languages and don't allow any assignment to storage. These functional languages are difficult to program in, but their programs are much more amenable to formal analysis and proofs of correctness.

■ **Unified Modeling Language:** UML is a standard notation for modeling real-world objects as part of developing an object-oriented design methodology. UML is used for modeling application structure, behavior and architecture, along with business processes and data structures. Vendors of many computer-aided software engineering products support the language. UML was developed from methodologies that also describe the processes in developing and using the model. (*www.uml.org*)

■ **YAML Ain't Markup Language:** YAML is an international collaboration to make a data-serialization language that is both readable by humans and computationally powerful. (*www.yaml.org*)

– *Russell Kay*

concepts such as thought, emotions, behaviors, kinesics, beliefs and facial expressions, through graphical or text-based representation. It goes way beyond emoticons! www.humanmarkup.org

· **Materials Markup Language:** MatML was developed for the interchange of materials information. www.matml.org

· **Multimedia Retrieval Markup Language:** MRML unifies access to multimedia retrieval and management software components to extend their capabilities. www.mrml.net

· **Physical Markup Language:** PML is a simple, general language for describing physical objects and environments for industrial, commercial and consumer applications. PML allows modularity and flexibility so it can be used in monitoring and controlling a physical environment. Applications include inventory tracking, automatic transactions, supply chain management, machine control and object-to-object communication. http://web.mit.edu/mecheng/pml/index.htm

· **Security Assertion Markup Language:** SAML is an XML-based framework for communicating user authentication, entitlement and attribute information. It allows businesses to make assertions regarding the identity, attributes and entitlements of a subject (often a human user) to other entities, such as a partner company or another enterprise application. www.oasis-open.org/committees/security/faq.php

· **Services Provisioning Markup Language:** SPM is a framework for exchanging user, resource and service provisioning information between applications and organizations. QuickLink 41908

· **Speech Synthesis Markup Language:** SSML assists in the generation of synthetic speech in Web software and other applications by providing a standard way to control speech aspects such as pronunciation, volume, pitch and rate across different platforms. www.w3.org/TR/speech-synthesis

· **User Interface Markup Language:** UIML permits the creation of user interfaces for any device, target language and operating system on a device. It describes three things: the appearance of a UI, user interaction with the UI and how the UI is connected to the application logic. www.uiml.org

· **Voice Extensible Markup Language:** Voice-activated applications are increasingly common, and VoiceXML specifies common features to help ensure portability between platforms. www.voicexml.org/

· **Wireless Markup Language:** WML describes content and formats for presenting data on limited-bandwidth devices such as cellular phones and pagers. Rather than attempting to deliver the same Web page content you would see on a PC, WML presents mainly text-based information optimized for mobile devices. QuickLink a6800

· **Extensible Access Control Markup Language:** XACML is an XML-based schema that was designed for creating policies and automating their use to control access to disparate devices and applications on a network. QuickLink 38180

· **Extensible Markup Language:** XML was created to combine the extensibility of SGML with the simplicity and wide support of HTML. Basically a subset of SGML, it's simpler and easier to implement and allows most of SGML's capabilities. XML was approved as a standard by the World Wide Web Consortium in 1998. QuickLink a6790 QuickLink 55873

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Dealing With an ISO Who's Only So-So

As our security manager realigns the workload for her team, she confronts an information security officer who's weak in most technical areas. By C.J. Kelly

HAVE YOU EVER watched a so-so movie, eaten at a so-so restaurant or attended a so-so theater production? Such activities are time-fillers, but they don't really add much to your life. I have a very hard time with nonproductive, nonedifying activities. I don't go back to so-so restaurants, and I don't recommend so-so movies or plays. If a book doesn't grab me, I don't finish it. Life is short, and each thing I do needs to mean something and be of value.

SECURITY MANAGER'S JOURNAL

So, what happens when you manage a so-so employee? I'm not one to just ignore the problem or give the employee tasks of no great importance just to keep him busy and out of the way. All work should count and help the organization reach its goals.

My problem is an underperforming information security officer (ISO). She doesn't have a technical background, and though she once had supervisory responsibilities, they were taken away because her direct reports were complaining bitterly about her lack of management skills. I'm not sure exactly how she fell into the position of ISO, but I think people in the agency we work for had been wondering what to do with her just when the legislative requirements of the Health Insurance Portability and Accountability Act security rule went into effect and it became necessary to assign someone ISO duties.

As happened within many organizations that were considered "covered entities" under HIPAA, my agency acted without fully understanding the duties of an ISO. I'll get to the basic misunderstanding behind this common mistake later.

I am now realigning the workload among my staff members, and as part of this task, I must take a hard look at the ISO position and make a decision about who should have that responsibility.

The current ISO isn't performing, primarily because she lacks experience and education in the security field. I have tried for half a year to mentor her, offering educational materials and pointing her toward webcasts, seminars and security white papers. It's like trying to teach a foreign language to someone who doesn't have a solid grasp of her native tongue. Her inability to grasp the material is apparently due to a dearth of foundational knowledge regarding networked computing basics (TCP/IP, client/server architecture, LAN/WAN topologies).

The rate of change in networking technologies is challenging to keep up with, even if you do know the basics. For this ISO, it's impossible.

> **I had hoped that she would offer to help the team. She did not.**

I told the ISO that several other staff members were sorely overloaded but that we had just expanded the staff by one employee and it was an opportune time to take a look at job responsibilities across the team. As I looked at what needed to be done by the team, I had categorized a host of tasks as "adminisdribble" — administrative tasks that shouldn't be on the desks of senior IT and security staffers. Half of those tasks were sitting on the ISO's desk. I explained that I would be taking them off her desk and re-evaluating each of the processes to see if they could be streamlined, integrated and automated. She became more and more uncomfortable as I spoke.

New Classification

I listed for her all the job responsibilities for the entire team and pointed out where some members were overloaded. I had hoped that she would offer to help the team. She did not. Instead, she became defensive and agitated and noted that another government agency was creating a new security classification. She wanted to "wait for that opportunity" — a new classification.

I took another tack. I used the whiteboard to list the duties I thought an ISO or senior security person should be responsible for in regards to architecture and administration. Those included policies and procedures; intrusion detection; firewalls; VPNs; antivirus, antispam and antispyware efforts; patch management; vulnerability scanning; risk assessment; and disaster recovery.

She blurted out, "But those are all technical in nature!"

"Yes, they are," I responded, "and if I were going to hire a security person, these would be his or her duties."

We were at an impasse created by that long-ago misunderstanding about the nature of the ISO position. When the HIPAA security rule went into effect, covered entities such as my agency were required to designate someone to handle ISO responsibilities. Many covered entities noticed that roughly 80% of the policies and plans required by the HIPAA security rule are categorized as "administrative," only 5% or so are categorized as "technical," and the rest are categorized as "physical."

Here's the misunderstanding: Even though the bulk of the policies are deemed administrative, implementing the policies is primarily a technical exercise. I believe — and many may argue with me — that writing a good policy requires a solid understanding of what technologies are available to implement the plan. You need some technical knowledge to be able to visualize the plan. You can't say, "Thou shalt do thus" and not be able to "do thus."

The ISO's response to the situation was painful for both of us because we both knew that she viewed her position as highly valuable to her. But as long as the agency's ISO lacked the technical foundation to be able to write implementation plans and execute them, the value to the organization was not there. She was very good at adminisdribble, but we already have an administrative assistant for those tasks.

In dismay, she asked if I would rewrite her job description and let her know what I wanted her to do in alignment with the agency's needs. Our next meeting is in two days.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "C.J. Kelly," whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com, or join the discussion in our forum: **QuickLink a1590**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

SECURITY LOG

Microsoft to Host Hackers Regularly

Microsoft Corp. is working on plans to make a recent hacker meeting held on its campus a twice-yearly event, according to a spokesman for the vendor's security group. The company plans to host another Blue Hat security event this fall. In sessions at the initial Blue Hat event, security researchers demonstrated to Microsoft executives and developers how flaws in the vendor's products could be exploited.

Securing Data With Fingerprints

Atmel Corp. and Bionopoly LLC's FingerGear division introduced the Bio USB Flash Drive. The flash-based thumb-drive storage device uses fingerprint recognition technology to secure data. It connects to the computer using USB 2.0. The Bio USB Flash Drive is available initially with a 256MB capacity for $149.

Netsky, Mytob Top Viruses in July

Sophos PLC reported that the most widespread virus that caused problems for businesses around the world last month was Netsky-P, a worm written by recently convicted German teenager Sven Jaschan. However, variants of the Mytob worm dominated the polls, accounting for seven of the top 10 positions and more than 37% of all viruses reported to Sophos during the month.

Spam Prevention

Engate Technology Corp. announced Engate MailSentinel, which uses patent-pending technology to prevent unwanted or malicious e-mail from leaving the source. Rather than analyzing the content of a message to determine its legitimacy, MailSentinel analyzes the actual SMTP session to detect the tricks used by spammers to hide their identities.

HACKERS, VIRUSES, AND WORMS

ARE MET WITH SWIFT AND DECISIVE ACTION

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- **Microsoft Risk Assessment Tool:** Complete this free, Web-based self-assessment to help you evaluate your organization's security practices and identify areas for improvement.
- **Internet Security and Acceleration Server 2004:** Download the free 120-day trial version to evaluate how the advanced application-layer firewall, VPN, and Web cache solution can improve network security and performance.

Microsoft

Geek's Garden

A STROLL THROUGH THE TECHNOLOGY LANDSCAPE

TOP 10
STATES IN U.S. 2005 APPLICATIONS SPENDING

CALIFORNIA	$5.2B
NEW YORK	$3.9B
TEXAS	$3.[illegible]
ILLINOIS	$2.[illegible]
FLORIDA	$1.[illegible]
PENNSYLVANIA	$1.[illegible]
OHIO	[illegible]
NEW JERSEY	[illegible]
MICHIGAN	[illegible]
GEORGIA	[illegible]

SOURCE: IDC, JUNE 2005

Japan Aims to Be Tops in FLOPS

IBM's Blue Gene – soon to be left behind?

■ **OFFICIALS IN JAPAN** have announced that the country intends to build a supercomputer that will be 73 times faster than today's top computer.

The current champ, IBM's Blue Gene, can handle 136.8 trillion floating-point operations per second, or TFLOPS. The Japanese education and science ministry plans to develop a machine that could operate at 10 PFLOPS, or 10 quadrillion calculations per second. It's targeted to be up and running by March 2011.

So, what will this gorilla of a computer do? Obviously no machine for small tasks, it will be used to model the formation of the galaxy, track climate changes and simulate human reactions to new drugs. In general, supercomputers are used for scientific calculations that would be impossible on any but the blindingly fast number crunchers.

Japan's Earth Simulator had been at the top of the supercomputer heap until it was displaced by Blue Gene in 2004. At present, the three fastest machines in the world were all developed in the U.S. Observers of the technology market noted that Japan's latest project has been triggered both by the desire to compete with Western nations and to hold off China, its rising regional technology rival.

Japan has budgeted $900 million to develop the 10 PFLOPS computer.

Page compiled by Tommy Peterson.

DIFFERENCE ENGINES

What a Coincidence

1924 Walther Bothe, a German physicist, mathematician and chemist, developed his "coincidence circuit," considered the first AND logic gate. It was developed to detect cosmic ray events and high-energy particles. The techniques influenced several fields of technology, such as the design of radar circuits in the 1940s.

The main idea of coincidence detection is that if a detector identifies some particle (called "clicks"), this is quite likely (with a certain probability *p*) not a real event but thermal or other noise. But if two detectors click simultaneously, the probability that it's still a noise event is extremely reduced. This technique therefore greatly improves signal-to-noise ratio.

The coincidence circuit must be able to differentiate between two signals that come at the same time from those that are more than a few microseconds apart. Designing such electronics was a major achievement at Bothe's time and earned him a share of the 1954 Nobel Prize in physics.

Walther Bothe developed the AND logic gate.

As the first AND logic gate, the coincidence circuit represents one of the most basic building blocks of digital circuits.

Most logic gates have two inputs and one output. At any given moment, every terminal is in one of the two binary conditions, low (0) or high (1), represented by different voltage levels. The logic state of a terminal can and generally does change often as the circuit processes data.

The AND gate is so named because it acts in the same way as the logical "and" operator. The output is "true" when both inputs are true. Otherwise, the output is false. 55921

GROVES OF ACADEMIA

Augmented Reality for Poultry Trimmers

■ **TECHNOLOGY** that displays computer-generated information on the physical world is being tested in poultry plants to improve communication between computers and workers.

Using augmented reality (AR) technology, researchers at the Georgia Tech Research Institute (GTRI) have designed two systems that project graphical instructions from an automated inspection system onto birds on a processing line. These symbols tell workers how to trim or whether they should discard defective products. Right now, inspection is done visually by human screeners, who communicate with trimmers using hand gestures. But an automated system developed and field-tested by the GTRI is being commercialized, and poultry plants are likely to implement the technology soon, according to J. Craig Wyvill, head of the GTRI Food Technology Processing division.

Two AR systems developed by professor Blair MacIntyre and colleagues Parth Bhawalkar, a graduate student, and Simeon Harbert, a GTRI research engineer, address these commercial requirements.

The first uses a location-tracked, see-through, head-mounted display. It overlays graphical instructions on a trimmer's view of the birds. The second uses a laser scanner, mounted in a fixed location near the processing line, to project instructions onto each bird that requires an action, such as trimming. In this approach, the product rather than the user must be tracked.

One augmented reality system uses a location-tracked, see-through, head-mounted display.

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1. Battery life may vary based upon usage patterns. Upper battery range tested using device for music playback. 2. Nonmetal weights [illegible] 3. Measured diagonally. 4. See www.sonystyle.com/cingular for complete offer details, price plans, service terms and conditions, and [illegible]

BRIEFS

Scalix Offers App For PIM Choice

■ Scalix Corp. announced its new Scalix Wireless Solution, which lets users choose the wireless service carriers and devices they use to send and receive e-mail, maintain contacts and calendars, and manage personal information management functions. The application supports all BlackBerry and Palm OS devices, including the Treo, along with a variety of Windows Mobile devices such as the HP iPaq and smart phones from Samsung Corp. and Motorola Inc., according to Scalix. The software, which starts at a one-time server list price of $1,000 and a monthly per-user fee of $10 for 100 users, supports all major wireless services.

Troux Updates Modeling Tool

■ Troux Technologies Inc. has begun shipping Metis Enterprise 5.0, a visual modeling tool for managing enterprise architectures. The system, which Troux acquired when it purchased Norway-based Computas Technology AS earlier this year, can help centralize the management of IT governance processes, said Troux. Customers can choose desktop, workgroup or enterprise products. Pricing varies based on customer needs and customization.

Electric Mail Offers Updated Service

■ Electric Mail, a provider of managed secure e-mail services, has announced an enhanced version of its PerimeterProtect service, which provides spam and content filtering and virus blocking for business e-mail systems. The new version includes improved message quarantining and tighter integration with Microsoft Exchange Server 2003 and Exchange Server 2000, according to the company, which is a wholly owned subsidiary of j2 Global Communications Inc. Pricing starts at $2 per user per month.

CURT A. MONASH

Time for a New View Of Data Management

DATABASE MANAGEMENT is in a crisis, one that's only partly recognized. The horrors of data integration may be well known, but they're only the tip of a much larger iceberg: schema complexity. Programmers, system architects, and database administrators focusing on design and operation alike — all their jobs are made immeasurably harder by the boggling complexity of relational schemas.

CURT A. MONASH is a consultant in Acton, Mass., and also blogs regularly on *Computerworld.com*. You can reach him at curtmonash@monash.com.

As schema diversity explodes, the pure relational model is collapsing under its own weight. We must replace it with a radically different view of data management, which I'm calling DBMS2, for database management system services. The key aspects of DBMS2 include the following:

■ **Task-appropriate data managers.** Just use whatever is cheapest and simplest for each set of applications. Possible choices include but are not limited to cheap online transaction processing DBMSs, high-end OLTP DBMSs, data warehouse appliances, XML-based document stores, highly distributed and/or small-footprint DBMSs, in-memory systems without their own persistent storage, or cross-corpus indexers without their own storage.

■ **Drastic limitations on relational schema complexity.** Relational schemas shouldn't go far beyond two simple models: master-detail for transactions, and hypercubes/star schemas for analytics. Anything inherently more complex is, with rare exceptions, better handled via the schema flexibility of XML. If you need to access data from a legacy application that violates these precepts, do so via XML-based Web services.

■ **Both XML-based and relational information integration.** Eventually, most DBMS2 data integration will be done via XML. But relational enterprise information integration will long have a role to play, such as connecting core OLTP and data warehouse systems.

DBMS2 is the antithesis of much current database theory. Rather than fighting modularity, DBMS2 embraces it. Rather than gathering administrative tasks in one huge hairball, it spreads them across many simple systems. Above all, unlike the Oracle pipe dream of a grand unified enterprise relational database, DBMS2 is a pragmatic, realistic continuation of what every large enterprise is doing today.

The need and opportunity for DBMS2 are driven by two overlapping trends: platform change and schema explosion. For starters, DBMS2 depends on the increasing availability of XML and Web services technology. It will be years before XML-based data-manipulation languages are sufficiently robust to handle the requirements of DBMS2, but those developments will happen, and most big software vendors will provide strong support for them in a timely manner.

Beyond that, one of the biggest reasons for embracing DBMS2 is a flood of low-cost alternatives to traditional DBMSs. For most enterprises, relational OLTP is approaching commodity status. Microsoft SQL Server is following Oracle up the food chain, while MySQL (which is even slated for SAP certification in two to three years, or maybe less) nips at Microsoft's heels.

Even more important, there's been an explosion in ultracheap OLAP technologies, both in-memory and in appliance formats. Most of these have very simple indexing schemes — some have no indexes at all — which yields huge TCO advantages in storage costs and administrative overhead alike.

The opportunity provided by these fledgling technologies might seem balanced by obvious risks. But before long, embracing them will be the only viable choice. The primary reason is schema explosion, on multiple fronts.

First, there's an explosion in profiles. CRM customer profiles (ideally with full Web site click-trail data), vendor profiles, security-oriented user profiles, you name it — in almost all cases, the available information, and types of information, vary from one profilee to the next. Mobile/pervasive devices just worsen the problem, adding complexity in terms of location, availability and form factor. Centralized, pre-DBMS2 master data management will never succeed.

Second, text documents are becoming an ever bigger part of IT, be they complex forms and contracts, maintenance manuals, health records, Web marketing content or just e-mail. Documents are commonly unpredictable in structures and sometimes in authoring and editing metadata as well. And the ultimate solutions to making text search work will depend on further schema extension and variability, in a number of respects.

Finally, IT needs to be infused throughout with representations of trust. Security, compliance, missing data — they all ultimately require some formalized hierarchy of trust. So do the multiple uncertainties of search engine results, document author reliability, planning forecasts and the like. The final resolution of these issues will require schema complexity beyond what relational systems can realistically handle.

Should you throw out Oracle and DB2? Hardly. But maybe you should reduce your reliance on them. The move to DBMS2 lets you exploit a variety of database technology advances from a variety of vendors. For specific product ideas, see my blog at *www.computerworld.com/blogs/monash*. **55953**

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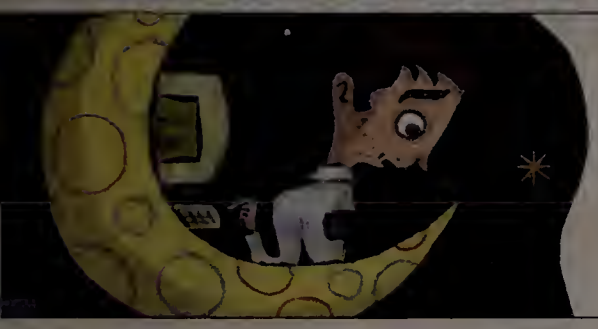
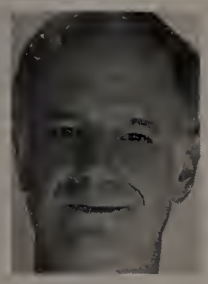


In the Dark
Night-shift workers can feel isolated, hostile and just plain tired. Here are some tips for keeping them happy and productive in the wee hours. **Page 42**

Career Watch
The hiring environment for CIOs; what a rise in IT pay may say about offshore outsourcing; the latest on tech job cuts; and CEOs' expectations for the economy. **Page 44**



OPINION:
The Elusive Executive Sponsor
Business leaders can be reluctant to serve as the executive sponsors of an IT project. Don't let them off the hook, Bart Perkins says. He offers some suggestions to get your executives to commit. **Page 46**

EMMANUEL KERNER

E-mail EXPOSURE

WATCH OUT! You may be responsible for gremlins in your corporate e-mail. **By Mary K. Pratt**

BRACE YOURSELF: You could be legally responsible for worldwide network security.

OK, that may be an overstatement, but it does capture the essence of what's ahead.

Companies that pass viruses, worms or any type of malware to other companies via electronic transmissions such as e-mail could find themselves in court, say legal and security experts. And they could be held liable for damage done, even if they unintentionally spread such cyberpests.

"There's very little question that it's going to come. The concept of due diligence has done nothing but push its way out into the consciousness of everyone in this country," says Charles Hibnick, chief systems security architect at AvMed Health Plans Inc., a health insurance company in Miami.

The stage is being set for such action, experts say. Federal laws, government agencies and private organizations are setting new standards for network and Internet security. Meanwhile, lawyers are testing various legal theories for punishing cyberspace criminals. And some companies with established relationships are signing contracts detailing security expectations that prohibit even the accidental transmission of malware.

ARE YOU COVERED?
New insurance options address liabilities from e-crimes:
QuickLink 55576

Given all this, can litigation be far off?

"I do think we are looking at this type of litigation in the future. And I think it's going to happen sooner rather than later," says Rodger

Cole, a litigation partner at Fenwick & West LLP in Mountain View, Calif.

In fact, some companies are already pursuing other businesses, albeit quietly, to recoup losses resulting from computer-related problems, says Julie K. Davis, executive vice president at Aon Affinity Insurance Services Inc. in San Jose and co-author of *e-Risk: Liabilities in a Wired World*.

Some cases involve companies inadvertently releasing viruses, worms and the like, she says. Others involve contractual liability in situations where companies had agreements to keep systems secure. Davis says these cases haven't wound up in court — yet — because executives prefer to avoid the media spotlight on such issues.

"You certainly have claims. What people usually do is turn it against their own corporate insurance policies," she says, adding that traditional policies generally won't cover such claims, however.

Dangerous Times

Given the state of electronic communications, the potential for getting into trouble is staggering.

"If you're operating on the Internet today, there is some level of constant attack activity," says Art Manion, an Internet security analyst at the CERT Coordination Center at Carnegie Mellon University's Software Engineering Institute.

> We are looking at [malware damage] litigation in the future. And I think it's going to happen sooner rather than later.
>
> **RODGER COLE, LITIGATION PARTNER, FENWICK & WEST LLP**

Viruses, worms, Trojan horses, botnet zombies, distributed denial-of-service attacks, hacking, blended threats — they're all out there, and many can hitch rides with e-mails and electronic transmissions, including instant messages.

"We're up to 60,000 different viruses out there," observes Jeff Platon, vice president of product and technology marketing for security at Cisco Systems Inc.

The threat is growing as computers and systems become increasingly connected, not only through the Internet but through business partnerships that establish connections and interfaces.

"My security depends on everybody else's security. And that's even more true when you have a closer relationship with someone," Manion explains. "When you open the door to someone else, you're just extending the trust — and the risk."

Companies might think their borders are secure, but if they have a connection to a business partner, perhaps that partner's borders aren't as strong, Manion says. That's a weak link that can let something bad get through.

"There certainly is a great deal of concern regarding the impact of viruses on the modern enterprise and IT infrastructure. The impact can be extraordinary, and the results can be disastrous," says attorney Gregg Kirchhoefer, a partner in the intellectual property and technology transaction practice at Kirkland & Ellis LLP in Chicago.

Creative Litigation

Bringing legal action in such cases is complex, experts say. It's difficult to quantify loss: How can a company prove the exact dollar amount of lost business if a virus knocks out e-mail for a day? It's also difficult, if not impossible, to prove the origins of malware.

"But certainly a creative lawyer could come up with a variety of methods in which liability could be inferred," says Sandra A. Jeskie, a partner in the trial department at Philadelphia-based Duane Morris LLP and a member of the board of the Computer Law Association. "I could see a negligence claim, even if it might be difficult to prove. I could make an argument that if you got infected and transmitted it to me, you did not properly protect me because you were so lax."

The question of negligence comes down to established standards, and computer security standards are evolving. Federal laws such as the Sarbanes-Oxley Act and the Health Insurance Portability and Accountability Act, along with industry standards such as ISO 17799 and BS7799, have created expectations for companies to meet.

"Companies have to be aware that their behavior, their security and their technology will be measured against something, either standards in the industry or what they told their customers they'd be doing," says Melise R. Blakeslee, a partner in the Washington office of the technology transactions and e-business group at law firm McDermott Will & Emery LLP.

Claiming negligence isn't the only potential legal strategy. Some lawyers say trespass, intentional interference with existing or prospective business relations and disturbance of quiet en-

What IT Can Do

Security is the big topic these days, but some legal and security experts question whether IT executives know their risk for liability. "When I speak about it, they're constantly shocked about the exposures that are there," says Sandra A. Jeskie, a partner at law firm Duane Morris.

Jeskie and others recommend taking the following steps to help limit risk and legal exposure:

Implement and maintain security measures that are standard for your type of company and industry sector.

Work with your legal department to ensure that IT meets contractual security obligations. Attorney Melise R. Blakeslee of McDermott Will & Emery says she's concerned that contracts stipulating security steps that partner companies must take "just get signed and put in the drawer."

Educate employees about malware: how to spot it, avoid it and report it.

Enforce computer-related employee policies, particularly those against downloading unauthorized software.

Deploy software that scans for unauthorized software. Nancy Flynn, executive director of The ePolicy Institute, points to employees' use of instant messaging as a prime reason for this step. "Malicious parties who want to spread viruses are using instant messaging, and by far the majority of employees who are using instant messaging are using free software, and companies have no tools in place to protect them," she says.

Limit access to your system. Art Manion, an Internet security analyst at the CERT Coordination Center at Carnegie Mellon University, promotes the concept of "least privilege," where IT departments give users and business partners only the access they need. "Don't give someone more access just because it's convenient," Manion says.

– Mary K. Pratt

THE Language OF LIABILITY

Companies are increasingly using contracts to help ensure security among their vendors and partners. Here's an example of terms used by one financial institution, according to Melise R. Blakeslee, an attorney at McDermott Will & Emery:

"Provider represents, warrants and covenants that the System . . . shall not contain or transmit or cause to be transmitted to Subscriber . . . any computer code designed to disrupt, disable or otherwise impede, disrupt or distort the operation of the System or any other software, firmware, hardware, computer system or network (sometimes referred to as 'viruses' or 'worms') . . . that would permit Provider or an unauthorized party to access the System, or would allow any other similar harmful, malicious or hidden procedures, routines or mechanisms which would cause such programs to cease functioning or to damage, impede or corrupt any data, communications, software, firmware, hardware, computer system or network or otherwise interfere with operations.

Provider shall implement and maintain security systems and procedures to prevent unauthorized access to Subscriber's or its Affiliates' systems through any network connections between Subscriber's or any of its Affiliates' network and the System."

– Mary K. Pratt

More TO COME

Legal experts see several other areas where computer-related actions could land companies in court.

Engaging in an "active defense" – in other words, retaliating – is one example, says Dallas-based attorney Benjamin Wright. This occurs when companies take aggressive action to stop an attack or other Internet-based activity. For example, a company might send junk data back to a server that's sending spam in an effort to disable that server.

"There are questions out there regarding whether it's legal to do things that might take down that server," Wright explains. "Are you somehow trespassing on that server or violating some computer law?"

CIOs who take an active defense might also file a lawsuit against the server's owner as a way to involve the courts and "make sure they're not doing anything illegal," he says.

Companies could be held liable for an employee's malicious activity – using the company's equipment to release a virus, for example, says attorney Sandra A. Jeskie of Duane Morris LLP.

Companies also could find themselves in legal trouble for any illegal peer-to-peer file sharing taking place on their systems, Jeskie says. Even if executives don't know about it, plaintiffs could argue that they should have been monitoring for such activity.

– Mary K. Pratt

joyment could apply as well.

"These are common law doctrines from England. Here the disturbance would be disturbing your own right to use your computer servers," Cole explains. "[Lawyers] have creatively used old legal doctrine to address the question of liability with spam, and I think the next wave of litigation will be in the virus area."

Far-fetched? Not quite. Jeskie points to the case of *Intel Corp. v. Hamidi* in 2003, where Intel accused former employee Kourosh Kenneth Hamidi of trespass for inappropriate use of e-mail. Although Intel was unsuccessful in its claim, Jeskie says the well-known case shows how old laws can be used today.

Companies are also using contracts to prevent such situations, experts say. "It is becoming increasingly common to see a clause that deals with the other party's duties to deal with worms and viruses and other types of things that can cause disruptions," Blakeslee says.

These clauses give companies another course of legal action: They can claim breach of contract if malware gets through and the contractual security measures weren't up to snuff.

"You can track the use of that language with the growth of viruses," Kirchhoefer says.

Not everyone sees increasing litigation forthcoming, however, especially in cases where malware is passed along via e-mail.

"Yes, people are thinking about the general topic, but liability for sending a virus through an e-mail looks to be one of the more difficult places for a successful lawsuit. And if you see a case like that, it's going to be a real fluke," says Benjamin Wright, a Dallas attorney who wrote *Business Law and Computer Security* (SANS Press, 2004).

Kirchhoefer agrees that a negligence lawsuit against a company that passed along malware via e-mail would be a hard case to win. After all, he says, both companies share responsibility for keeping their systems safe.

> Liability for sending a virus through an e-mail looks to be one of the more difficult places for a successful lawsuit.
>
> **BENJAMIN WRIGHT, ATTORNEY AND AUTHOR OF BUSINESS LAW AND COMPUTER SECURITY**

But that won't keep companies from filing suit, some say.

"We're always looking for someone else to assume the blame, to assume the liability," says Nancy Flynn, founder and executive director of The ePolicy Institute in Columbus, Ohio. "So it would make sense that at some point someone will try to sue over the issue of a virus getting into the system." **55572**

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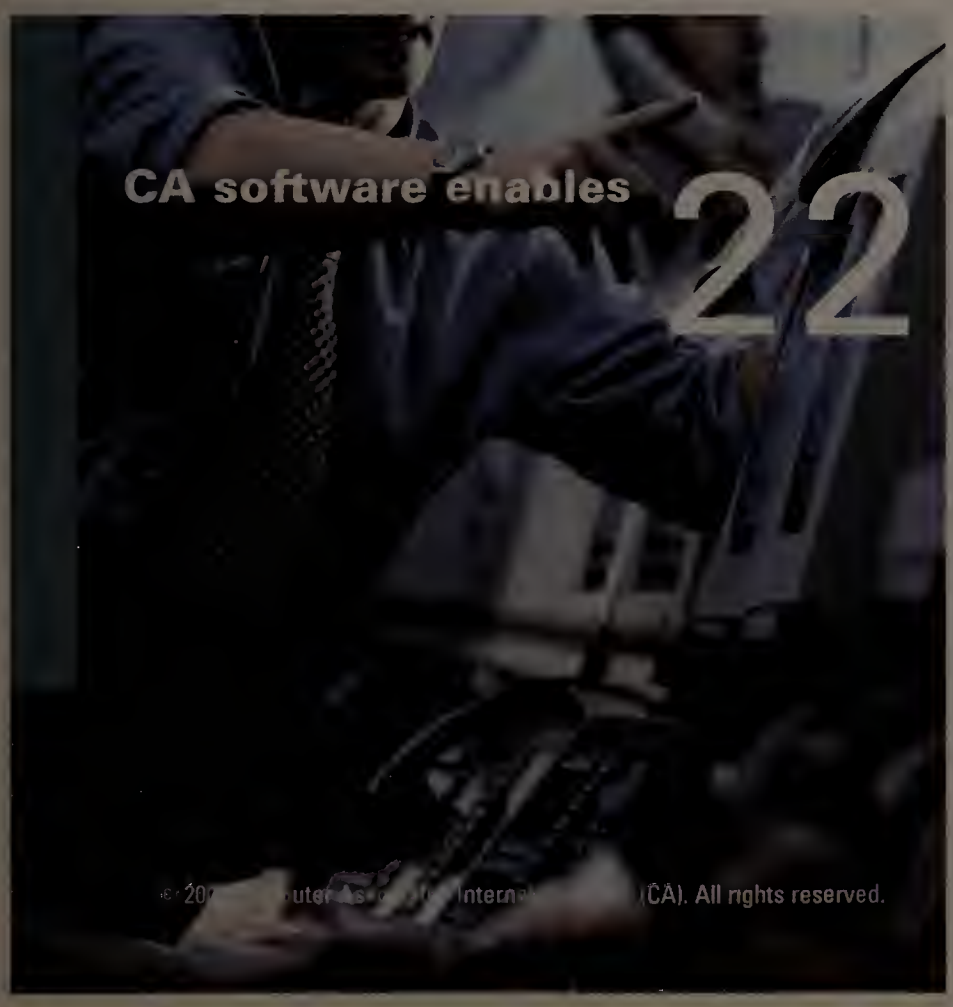

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'MANAGING Prosumers'

The new wave of handheld consumer devices in the workplace means new headaches for IT managers.

BY MATT HAMBLEN

AN IT MANAGER wandering through the exhibits at a mobile and wireless computing expo might well wonder where the explosion of new applications and devices, many created for the consumer world, will lead.

How can a company even begin to manage live TV on cellular phones? How will the proliferating wireless e-mail be stored? How will it all be made secure, with so many different networks and devices and applications?

Companies have faced, and sometimes ignored, the demands of managing handhelds and wireless devices for years. IT managers waver between two approaches: Throw open the floodgates and try to accommodate what's coming, or throw up your hands and ban everything except what you deem acceptable.

But the problem will become more complex as new college grads arrive at work — and bring the consumer-focused devices and applications they see not as toys but as essential tools they have integrated into their lives.

When a young "prosumer" (short for professional/consumer) shows up with streaming video clips, live broadcast TV and a whole range of instant messaging, collaboration and music-downloading options on his smart phone, how will IT hold the line on standards?

And if he wants to use the device for work-related e-mail, access to corporate databases or storage of corporate data, will IT restrict the access pathway? What happens when that worker resists using separate devices for work and personal life? Will IT allow frivolous functions to run on the same approved devices as mission-critical ones?

Analysts say that over the next two years, these and other scenarios will force IT managers into the role of enforcer as never before. "The IT department has to do something about more and more consumer-type devices entering the enterprise," says Roberta Cozza, a U.K.-based analyst at Gartner Inc.

This will require careful planning at the highest management levels to de-

Handling Handhelds

IN AN APRIL REPORT, Gartner delineated three logical levels of support for handhelds and smart phones, from treating them like PCs to giving them no support at all.

The authors of the report prefer the middle road. "There must be a more tolerated kind of support given users apart from bans or fully supporting them," says analyst and co-author Roberta Cozza.

The tolerated approach gives IT a "safety valve for the inevitable claim from users that there is something better on the market," she notes.

This approach requires that IT do the following:

- **Provide data-interface support** to personal information manager (PIM) and e-mail applications, as long as the user makes the connection through software selected by his company.
- **Select PIM and e-mail synchronization applications** that support a wide range of consumer handhelds.
- **Provide strict security guidelines** and handheld policies, and clearly explain them to users.
- **Install security software** on a server that enforces a password when a user powers on.
- **Encrypt stored data.**
- **Refuse to purchase devices for the user**, answer users' questions about them or develop applications for the handhelds.

GUIDELINES

- If a company provides handhelds to users, it should clearly state that no application development will be supported, because it would tax IT resources.
- If a company supports development of an unusual custom application, IT should choose the device and support and track it throughout its lifetime, just as it would a desktop or laptop.
- IT managers should set up a "cafeteria" plan under which users can choose from a predefined list of supported hardware and software that includes a budget amount for each selection, based on actual cost or total cost of ownership. Such a plan recognizes that people – even within a workgroup – have individual needs. The one-device-fits-all approach "will come under further attacks as the number of technology options for users explodes," Gartner says.

Matt Hamblen

velop policies that control devices and applications to limit security lapses and IT headaches while still winning the support of end users.

Two Approaches

Some IT managers are already holding a tough line on handhelds and wireless devices, while others have tried to accommodate innovations.

"Why do we in IT care what that new hire just out of college wants to run on his phone or device?" says the assistant vice president of IT compliance at a Western bank. (She asked to remain anonymous because her company is in acquisition talks.) She believes the bank should ignore user pleas for consumer applications and set strict controls on devices and access.

"You have to protect the enterprise," she says. "You have to protect the customer. It's a huge thing for a bank."

Lapses that could result in leaked customer information could bring severe federal fines as well as damage to the bank's reputation, the vice president explains. "That's huge, and we could not be in business if customer information got out," she says.

The bank limits devices used by many of its 2,300 workers. A typical knowledge worker carries a laptop, a cell phone and a BlackBerry handheld capable of transmitting encrypted e-mail. Handhelds and phones are treated like desktop computers, with regard to access privileges and rules about what data can and can't be loaded on them, the compliance officer says.

Workers aren't allowed to attach a personal device to the bank's network, and they can't use the Universal Serial Bus ports of their laptops for storing corporate data, to prevent it from being transferred to a personal storage device.

"Control is important," the bank executive notes. "You can't be compliant [with federal rules such as the Sarbanes-Oxley Act] if you don't have control."

In contrast, at consumer electronics retailer Best Buy Co. in Richfield, Minn., 4,000 employees are allowed to use a fairly wide range of devices, including BlackBerry and Audiovox handhelds and Palm OS devices such as the Treo, says Jeff Robles, sourcing manager for enterprise products and transportation at Best Buy.

"Given we are a technology company, we understand there are business requirements that will govern the use of our devices, so we attempt to manage to the need while mitigating any security issues," he says.

To do this, Best Buy relies on several management software products from Traq-wireless Inc. in Austin, including Mobile Source. Traq-wireless says its software is designed to reduce costs and mitigate security and intellectual property risks by giving IT managers visibility into which employees have which devices and services.

More to Come

Regardless of today's approach, the next few years will challenge IT shops to keep up with multiple operating systems, wireless carriers, and new devices and applications, analysts say.

"It's going to be a lot worse," says Bob Egan, an analyst at Mobile Competency Inc. in North Providence, R.I., citing the proliferation of cheap consumer-centric devices, including camera phones and mass storage devices. "It's a new frontier. There's not a single company out there doing a very good job managing mobile devices as a class."

For example, Egan says, most companies overlook the issue of protecting intellectual property on smart phones. When a salesman puts customer contact data on a phone, that information can be lost if he changes jobs.

Some mobile operators such as Sprint Corp. are beginning to offer services to manage mobile hardware and software, Egan says, but outsourcing mobile security is a step many IT shops may resist.

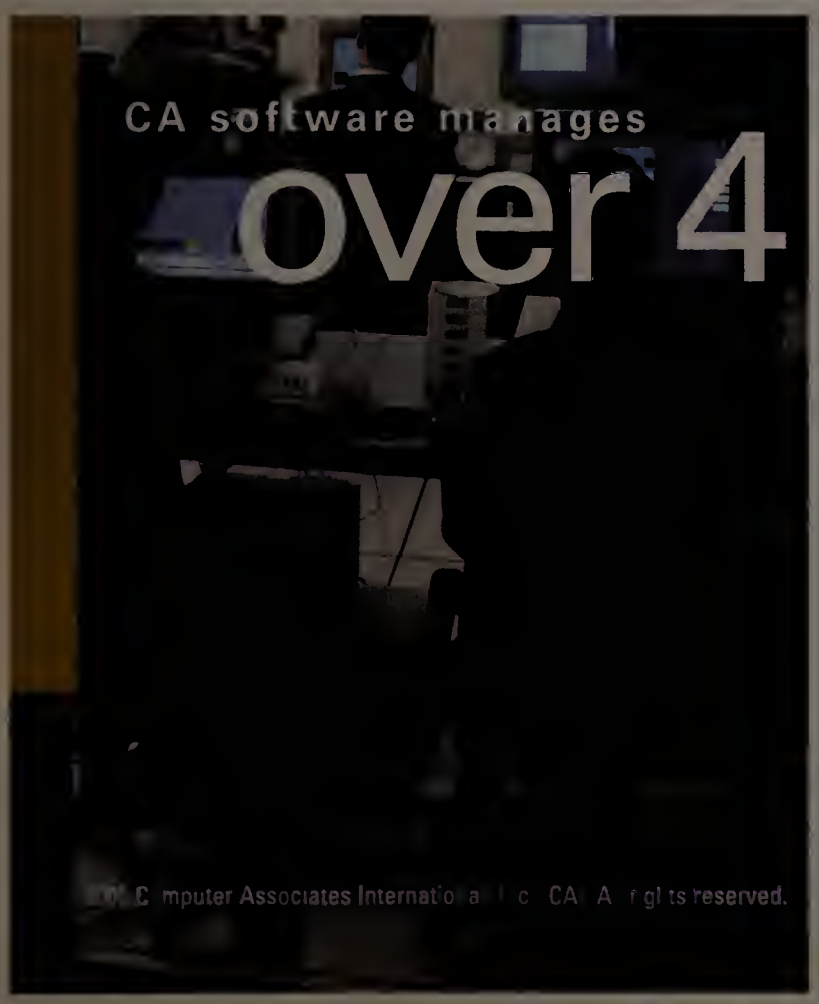
As for applications, Egan says some companies are trying to enforce a list of approved software for employees, but that's difficult to implement on a practical level. Egan says the same management model that corporations use for purchasing a laptop and provisioning and supporting it should apply to a phone or handheld device. But with handhelds, rules are harder to enforce.

There are other potential issues, he says. What if an employee purchases a device himself but uses it for work? Can the company demand access to the data? And what happens if the device is lost or stolen? What about archiving e-mail and capturing and archiving short text messages?

"Consumer trends such as text messages need to be on the radar of CIOs and IT managers, because they are translating into main user issues in the enterprise," Egan says.

Gartner stated in a recent report that the trend of consumer devices entering the workplace "creates havoc for IT organizations whose operations are based on standards and stable platforms."

Companies are protecting the front end of the organization with a firewall, the report says, but the back end is protected "only by the good intentions of employees." **55580**



ADAM McCAULEY

IN THE DARK

Managing IT workers on the night shift raises unique challenges. BY JUDY ARTUNIAN

LAST YEAR, a veteran IT manager who had spent her career working traditional business hours at a California entertainment company switched to a shift that ended at midnight. It was an eye-opener. "You do nothing but sleep and work on the days you work. You really feel that you have nothing to do with the 'business' of the business anymore. It was the most isolating experience professionally I have ever had," she says.

For decades, many IT night-shift workers have echoed similar sentiments. Some people prefer to work during the wee hours. But even die-hard night owls struggle with the physical and psychological demands of working when everyone else is asleep.

While it's difficult to estimate how many IT professionals are on the job after dark, their numbers are likely to multiply. "Increasingly, multinational companies are centralizing their applications and related infrastructures to achieve lower operating costs and better systems integration. Round-the-clock IT operations are often essential to these global initiatives," says Paul Hamerman, an analyst at Cambridge, Mass.-based Forrester Research Inc.

The Fatigue Factor

Studies show that night-shift workers sleep less than people who work during the day. When fatigue sets in, productivity can plummet. Changing sleep hours on days off can increase the effect.

"That's like going to Europe for the weekend. If your body is usually asleep at a time when you now have to be awake and on the job, you'll feel drowsy and be more prone to accidents and mistakes," says John Eickholt, a physician who is medical director of the Worthington Sleep Wake Center in Columbus, Ohio.

Other hardships reported by night workers are rooted in feeling disconnected from management, especially during shifts when few managers are on hand.

"What often happens is that people become a team that operates independently of the company," says Betsy Connelly, president of Circadian Technologies Inc., a Lexington, Mass.-based research and consulting firm specializing in extended hours operations. "That can lead to creative ideas, but also to an adversarial relationship with the rest of the company."

That animosity can heat up if night-shift workers sense that they aren't being heard. Renee Cornair, a computer analyst who works from 8:30 p.m. to 7 a.m. at *The Orange County Register*, a daily newspaper with headquarters in Santa Ana, Calif., says that she routinely e-mails managers and associates to report issues that crop up during the night and to suggest resolutions.

"The problem is that people are overwhelmed by e-mail, so it's difficult to get them to read those communiqués," Cornair says, adding that important information from management can also slip through the cracks when meetings are held when night workers are sleeping. "Without communication, you're cut off from the rest of IT, from knowing what the business needs are, what projects are moving forward, what the timelines are, what the service levels are evolving to," she says.

Resolving thorny technical problems without the help of supervisors can be another source of stress. "You can't just know what to fix. You have to know why it works and how to apply it to different situations," explains Rishi Maharaj, a help desk technician on the 4 p.m.-to-midnight shift at Willow CSN Inc., a Miramar, Fla.-based company that provides virtual call center services.

What to Do

The following are steps that IT managers can take to help their night-shift crews be more productive and content:

WHILE YOU'RE SLEEPING

- Night workers get an average of five hours of sleep in a 24-hour period. That's two hours less than the minimum amount recommended by sleep experts.
- Up to 15% of night-shift workers suffer from sleep apnea, a potentially fatal condition, compared with 2% to 3% of daytime workers.
- Employee turnover in night-shift operations is 10%, compared with 3% for U.S. companies overall.
- Absenteeism among the nighttime workforce is 9%, compared with 3% for daytime workers.
- When night-shift employees select their own schedules, their absenteeism rate goes down to 8%.

SOURCE: CIRCADIAN TECHNOLOGIES INC.

Recognize the night shift's achievements. "They save our butts while we're sleeping," says Christopher Faulkner, CEO of C I Host Inc., a Web hosting and data center management company in Bedford, Texas. "During the day, everyone can congratulate someone who does a good job. But you have to make an effort to reward the night guys."

Don't let low morale fester. Connelly advises gauging employees' moods by conducting a confidential employee survey. In particular, look at why employees take sick days. "According to our surveys, only one-third of employee absences are related to being sick," she says. "Find out why they're really out."

Keep them busy. According to Circadian Technologies, the more idle time night workers have, the higher their rate of absenteeism. Connelly suggests setting work schedules around predictable ebbs and flows in work volume. If that's not feasible, look for ways that employees can fill their free time constructively. For example, C I Host recently offered a cash bonus to graveyard-shift workers who revised one of the company's online manuals during their idle hours.

Watch those shift times. Because of physiology, most people experience a lull in alertness between 3 a.m. and 6 a.m. That means if you drive to or from work during that stretch, you have a greater risk of being in a traffic accident, Connelly says.

Change schedules with care. Frequent switching between day and night shifts can wreak havoc with the body clock. If you must rotate shifts, Eickholt says, let employees work for two to three months on one shift and then move them to a later shift.

At Atlanta-based United Parcel Service Inc., computer operations employees change shifts every four months. "We like to give them at least one month's notice. If they have a two-working-spouse family or a child they need to take care of, they can make adjustments," says Ed Zolcinski, director of worldwide data center operations. "That's probably one of the most important things we do for them." The company says its annual employee opinion survey shows that employees are satisfied with this arrangement.

Create a healthful work environment. Eickholt suggests these energy-boosting measures:

- Install full-spectrum lighting that's as bright as possible, without compromising comfort and safety.
- To keep drowsiness at bay, provide food choices such as fruits, vegetables and nuts rather than sugary snacks.
- Encourage employees to move around. Even short walks across the room can help ward off sleepiness.

Finally, tell new night-shift workers what to expect. "Make sure people understand what this kind of commitment to the schedule means," says the entertainment company IT manager, who requested anonymity. "Make sure it's the right fit for the right people." 55582

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Throw Out the Rules

Leading an elite team on a mission requires a new approach

Convene the elite of your company for a world-changing project, and you have a virtuoso team. Talent, energy, ambition, intensity, ego, risk — these teams have it all in spades. And they play by a different set of rules. In this month's Harvard Business Review, *co-authors Bill Fischer and* **Andy Boynton** *discuss their study of virtuoso teams in 20 top companies. Boynton, the dean of Boston College's Carroll School of Management, told* Computerworld's *Kathleen Melymuka that at this level, there's no room for nice.*

What's a virtuoso team? A team that has the explicit mission to change the world — big change, big objectives, a brand-new system never done before. A financial services firm we looked at worked on a mass customization project — a total revamp to personalize financial services. A consumer goods company created a global supply chain project. It's about a breakthrough. And [the team is] composed of the very best talent obtainable, role by role: a team of superstars.

Yet you say most companies deliberately avoid creating virtuoso teams. Why? Most companies want to avoid getting a bunch of big egos and strong wills on a team, because they're afraid of too much tension and conflict. They look at who's available, who has experience, and they look for harmony — people that will get along. Not every project deserves a virtuoso team, but every organization has some projects that do.

How does the approach to teamwork differ? Several things. There's almost a frenetic energy in how they work. It's far more intense than in a normal team. Also, there's a lot more direct, no-holds-barred dialogue. We say a polite team will give you polite results. These are not polite teams. They work together physically and intensely — not by e-mail and phone. There is speed — rapid prototyping and rapid movement of ideas. There's also a very clear statement of what they're trying to do and not do upfront. And there's something in it for everybody.

You emphasize close quarters and tight time constraints. What does that do for the team? In concert with other things, it ensures true collaboration where ideas, not tasks, are the focus. Where people are belly to belly and they feel they're under pressure, there's a lot more direct dialogue, a lot of intimacy and an intense blending of skills. There's an acceleration of momentum. That's the way you want to set it up to make it work well.

Why is it so important not to be polite? There are so many obstacles to getting the best ideas out on the table. Hierarchy drives ideas; the boss says something, and everybody agrees. Here, you're creating a real marketplace for ideas. People aren't worried about the consequences of what they say.

What kind of characteristics would the team manager require? He has to be a conduit of ideas from the outside. He has to listen extraordinarily well. He has to be supremely self-confident, because he's got to let those egos and the "I" soar. Nothing dumbs a team down more than everything being "we." Compromise is the sire of mediocracy. It's not about compromise; it's about getting there. And he has to value failure as an opportunity to learn.

TRADITIONAL TEAMS

- Choose members for availability
- Emphasize the collective
- Focus on tasks
- Work individually and remotely
- Address the average customer

VIRTUOSO TEAMS

- Choose members for skills
- Emphasize the individual
- Focus on ideas
- Work together intensively
- Address the sophisticated customer

What do you think is the biggest challenge in managing a virtuoso team? You need a manager that understands the rules of the game; someone who's direct, who's there to get results, not to be polite; someone who won't let them accept compromises; someone who wants to change the world and will keep that ambitious target in front of them. Leadership is a contact sport. It's a whole different environment, and if you don't know that going in, it can unravel. **55578**

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Career Watch

TECH JOB LOSSES DOWN FOR QUARTER, BUT UP YEAR OVER YEAR

With cautious optimism, outplacement services vendor Challenger, Gray & Christmas Inc. announced last month that second-quarter technology job losses in the U.S. were down 33% from the previous quarter. But it said the cuts were still running 16% higher than in the same quarter one year ago.

Moreover, job losses in the technology field accounted for 18.4% of all layoffs announced in the first six months of 2005, the company said, whereas one year earlier, tech job cuts represented 13% of the six-month total.

The most recent job losses took place largely at computer firms, which have seen weak demand for semiconductors as well as an apparent reluctance on the part of corporate customers to invest in new technology, according to the survey. Job cuts in the computer sector totaled 20,470, or 51.5% of all technology-related job cuts in the second quarter.

– Todd R. Weiss

TECHNOLOGY JOB CUTS

Q2 '04	Q1 '05	Q2 '05
34,213	59,537	39,720

SOURCE: CHALLENGER, GRAY & CHRISTMAS INC., NEW YORK

Richard D'Amaro

Q&A

TITLE: CEO

COMPANY: Tatum Partners, Atlanta

Just as enterprises are relying more on contract IT labor nowadays, so too are organizations making more extensive use of temporary CIOs, or "CIOs for hire."

In some instances, CIOs are brought in on a short-term basis to help slash costs, oversee a major ERP implementation or help orchestrate other strategic initiatives.

Tatum Partners, an Atlanta-based firm that places full- and part-time IT and financial executives, recently named Richard D'Amaro, former director of KPMG's health care practice, as its CEO. *Computerworld*'s Thomas Hoffman spoke to D'Amaro about the current hiring environment for CIOs.

What are some of the skills that clients are looking for from CIOs these days? A lot of our clients are dealing with regulatory issues and the necessary skills to optimize their applications to make them impactful to the overall business.

It used to be that when you went into an organization, there were silos – a chief marketing officer, a chief financial officer, a chief information officer. Now, for a company to hit on all cylinders and serve the customer, the skills that used to be very vertical have to become horizontal and blur more across roles.

What skills are clients demanding from the CIOs they hire in part to handle issues related to the Sarbanes-Oxley Act? The skills are about knowing the regulations and the requirements, as well as leadership skills and how to implement this with an existing staff or an augmented staff. It isn't just about implementing Sarbanes, but dealing with the sophisticated controls and processes that are required.

Some studies suggest that CIOs are experiencing longer tenure than CEOs and CFOs. Does this map with your experience? If so, what are the factors that are contributing to this? I've not seen statistics. If we accept the notion that CIO tenure is on the rise, what's happening now is that the requirements of companies to not only have systems to run the business but to meet the regulatory requirements are requiring our clients to commit to being with this person for a significant period of time.

There was a lot of turnover when all of the ERPs weren't achieving the results they were expected to. But I suspect it's becoming less and less of an issue, and the depth and breadth of a CIO is becoming key to companies long term.

Page compiled by Jamie Eckle

CEOs Turn More Glum

CHIEF EXECUTIVES across the U.S. are less confident about the state of the economy now than they were in the first quarter of this year, The Conference Board Inc. reported last month in its latest survey of CEOs.

The CEO Confidence Measure fell to 55 in the second quarter, after registering at 62 in the year's first quarter. A reading of more than 50 points reflects more positive than negative responses. The survey includes about 100 business leaders in a wide range of industries.

CEOs' assessments of current conditions deteriorated over the last quarter. Approximately 44% of CEOs claimed that current economic conditions have improved, down from nearly 59% in the last quarter. In assessing their own industries, close to 38% said conditions are better, down from approximately 57% last quarter.

37%
Percentage of CEOs surveyed who expect economic conditions to improve in the coming months, down from 43% in Q1.

IT Pay and Offshore Disillusionment

FOOTE PARTNERS LLC found signs of strong pay growth for several IT skills in a survey of some 50,000 IT professionals that was released last month. The New Canaan, Conn.-based research firm sees this upward trend as evidence that offshore outsourcing is no longer holding down IT salaries in the U.S., as it was as recently as last year. Says David Foote, the firm's co-founder, president and head of research, "Companies have become more aware of the difficulties in doing offshoring successfully and achieving anticipated cost savings. They're once again investing in their own people to build and maintain systems critical to their business strategies. And they're using competitive pay to attract and hire workers with the right combinations of technical and business skills to do this."

Pay increases were especially strong for noncertified IT professionals, but they have only begun to make up the ground they have lost over the past four years. Overall median average pay for 89 noncertified skills in the survey grew nearly 5% for the year that ended July 1, to 6.9% of base pay. Over the past four years, pay for such skills has declined over 20%. **55698**

HOT NONCERTIFIED SKILLS (25% or more growth in skills pay premiums, past 12 months)
■ SQL Server ■ WebSphere ■ Active Server Pages ■ Microsoft .Net

"COOLING" NONCERTIFIED SKILLS (lost the most value, past 12 months)
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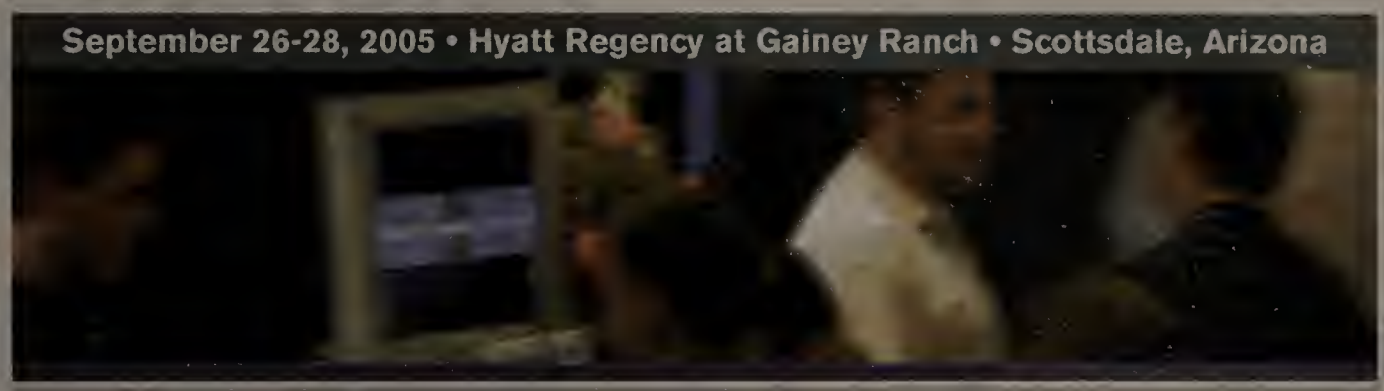

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EXEC TRACK

Morrison to Head Motorola IT

Motorola Inc. in Schaumburg, Ill., has appointed PATRICIA B. MORRISON senior vice president and CIO. Morrison most recently served as CIO at Office Depot Inc. Previously, she was CIO at The Quaker Oats Co. and at GE Industrial Systems.

McCarthy Gets Nod As Aetna CIO

Aetna Inc. in Hartford, Conn., has named MARGARET McCARTHY senior vice president and CIO, responsible for Aetna Information Services. Previously, McCarthy was vice president and head of business solutions delivery.

McAfee Picks Decker as CIO

McAfee Inc., a provider of IT security software in Santa Clara, Calif., announced that RICHARD J. DECKER has been appointed CIO. Previously, Decker was CIO at Mentor Graphics Corp. and at Measurex, a process control company that's part of Honeywell Inc.

Tufts University Names Tynan CIO

Tufts University in Medford, Mass., announced the appointment of AMELIA TYNAN as CIO and vice president for IT, effective Sept. 1. Tynan is currently vice provost and CIO at the University of Rochester in New York.

Air Force CIO Tapped by SRA

SRA International Inc., a Fairfax, Va.-based provider of IT services and software to federal government organizations, announced the appointment of JOHN M. GILLIGAN as vice president and deputy director of the company's defense-related operations. Previously, Gilligan was CIO at the U.S. Air Force. He also served as CIO at the Department of Energy.

BART PERKINS

The Elusive Executive Sponsor

ONE OF THE biggest predictors of project and program success is having an effective executive sponsor. This is the senior executive who "owns" the program and is responsible for making sure it's successful. The executive sponsor is typically the one who proposed the program and whose business unit or organization will receive the majority of the program's benefits. To be effective, he must have enough clout to make any business process or organizational changes the program requires. If your program has a missing, weak or superficially involved executive sponsor, failure is almost inevitable.

BART PERKINS is managing partner at Louisville, Ky.-based Leverage Partners Inc., which helps organizations invest well in IT. He was previously CIO at Tricon Global Restaurants Inc. and Dole Food Co. Contact him at BartPerkins@LeveragePartners.com.

If it's difficult to identify who the executive sponsor should be, something about the proposed program may need to change. For example, when a major program crosses several organizational boundaries, it may be advantageous to break it into individual programs, each with its own executive sponsor.

Alternatively, the problem may be a flawed organizational structure. One client of mine recognized that its worldwide distribution system was ineffective and overly expensive. Since each region controlled its own logistics, no one owned the entire process. The client had to pull logistics out of the business units and create a corporate worldwide logistics organization in order to revamp its distribution system successfully.

Even after an appropriate executive sponsor has been identified, he may still resist taking responsibility for the program. An executive may be reluctant to serve as sponsor for a number of reasons:

■ **He is skeptical about the business case.** Make sure you both have done your homework and all the data is correct. Then work with the executive sponsor to revise the business case data until you both agree. If the executive sponsor can't be convinced of the program's viability, you'll get lukewarm support at best. Be prepared to walk away from the program.

■ **He doesn't feel sufficient pain.** If the executive sponsor's business unit is meeting all of its targets, he may not believe that the new program will be worth the disruption it will cause. Determine whether the program will contribute to some personal win for the executive sponsor. If the personal win is large enough, the executive sponsor may be enticed to sign up.

■ **He believes it's an IT program.** Even today, some executives believe that any program involving computers is the responsibility of IT. Try to educate your targeted sponsor so that he sees the effort as a business program that is IT-enabled. I have recently seen a number of IT organizations respond to this problem by attempting to sponsor major business programs alone. IT can rarely push a business program through a corporation successfully, however. The majority of these programs are doomed to failure and should be canceled before they waste precious funding.

■ **He isn't supporting the program for political reasons.** If you believe that the executive is posturing or is afraid of his peers' reactions, call his bluff by threatening to cancel the program. You will quickly discover whether the objections are genuine.

■ **He faces personal challenges.** If an executive is close to retirement or facing personal difficulties such as a divorce or serious illness, he may not want to take on another major, multiyear challenge. In these cases, it's best to wait until the crisis has passed or the executive has been replaced.

■ **He lacks the requisite experience.** The executive may not fully understand the responsibilities of an executive sponsor, or he may feel that his expertise is insufficient. Offer to supply the appropriate project management skills in return for his financial and political support of the program. This can be advantageous to IT because it ensures that the project manager will understand the IT side of the business.

An involved and committed executive sponsor is critical to program success. There's old joke that at a bacon-and-eggs breakfast, the chicken is involved, but the pig is committed. A good executive sponsor must be both. If he is involved but not committed, you will get lip-service support at best. If he is committed but not sufficiently involved, the program will suffer and probably fail.

Don't pursue a path that is doomed from the start. Do everything possible to acquire the necessary executive support for major programs upfront. Without the leverage provided by an effective executive sponsor, you might as well cancel the program and invest your dollars more wisely elsewhere.

55508

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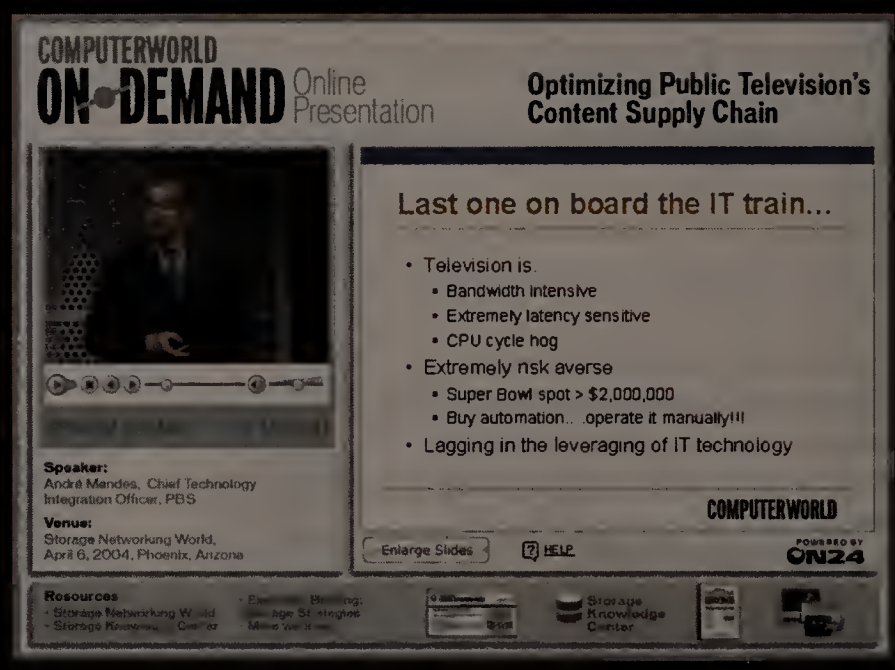

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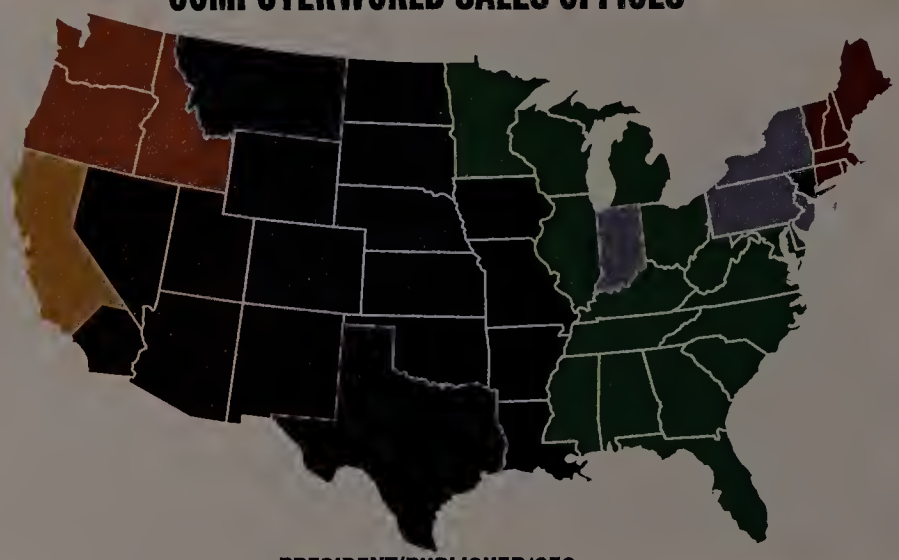

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Cisco Flaw

Basel, Switzerland-based drug maker. "Vulnerabilities will always exist. Organizations have to prepare themselves to be able to protect themselves."

Security researcher Michael Lynn triggered the concerns two weeks ago when he made a presentation about the router flaw at the Black Hat conference in Las Vegas. Cisco and Atlanta-based Internet Security Systems Inc., Lynn's former employer, had tried to stop him from giving his scheduled talk [QuickLink 55863].

Cisco attempted to prevent the information from spreading by securing a court injunction against Lynn and getting Black Hat's organizers to remove his presentation from the conference proceedings. But several security-oriented Web sites posted copies of the presentation, prompting Cisco to issue an advisory on July 29 in which it urged users to upgrade to the latest version of its Internetworking Operating System software.

Action Plan

Steps for dealing with the threats to Cisco's IOS:

1. INVENTORY all Cisco routers in your IT infrastructure.

2. IDENTIFY routers that can be upgraded to the latest version of IOS, and develop a plan for replacing the ones that aren't upgradable.

3. SET UP A LAB for testing the new IOS images that will be installed as part of upgrades.

4. START THE UPGRADE process with the routers that are most critical to your operations.

SOURCE: JIAN ZHEN, LOGLOGIC INC.

According to the Cisco advisory, products running certain versions of IOS are vulnerable to attacks that use specially written IP Version 6 packets. Only devices that have been explicitly configured to process IPv6 traffic are affected by the flaw, Cisco said.

The information Lynn disclosed shows how malicious hackers can compromise routers to "stop, redirect and scramble network traffic," said Gene Hodges, president of IT security vendor McAfee Inc. in Santa Clara, Calif.

"Up to now, the [security] community, I believe, has somewhat naively assumed that this wasn't possible," Hodges added, citing the complexity of attacking routers.

Potential Reuse

Although the updated IOS version isn't vulnerable to the hack detailed by Lynn, any newly discovered buffer or heap overflow vulnerability in the software could be exploited using the same process, warned Jian Zhen, director of product management at LogLogic Inc., a Sunnyvale, Calif.-based vendor of tools for managing network data logs.

"That's the most scary part of this whole incident," Zhen said. "The vulnerability is difficult to exploit due to the technical competency required. But all it takes is someone to write the necessary shell code, and 'script kiddies' will be able to use that for new vulnerabilities discovered in the future."

Zhen added that Cisco needs to do "a thorough code audit" to identify possible overflow vulnerabilities in IOS and then eradicate them. "It won't be a simple task, and it will take time, but not doing it will put the Internet at risk," he said.

Even so, attacking routers isn't easy as long as companies employ the right defensive measures, said Lloyd Hession, chief information security officer at BT Radianz, a New York-based provider of network connectivity services to financial firms.

"The first tenet of router security is to make the router inaccessible," Hession said, noting that the devices should be shut off from the Internet as much as possible.

For instance, putting the command-and-control routers that actually process data packets in their own separate network segment can make it harder for hackers to access them, said Paul Mockapetris, inventor of the Internet's core Domain Name System and chairman of IP address management vendor Nominum Inc. in Redwood City, Calif.

"That's why carriers run separate control networks," Mockapetris said. "An attacker has to first get on that net before he can launch an attack. It's just the basic principle of multiple lines of defense."

The bigger headache for large companies from the IOS flaw is the disruption associated with updating vulnerable routers, Hession said. BT Radianz has more than 40,000 routers, the vast majority of them from Cisco, and updating them could require several months of planning, testing and scheduled downtime, Hession said.

As a result, he noted, patching decisions need to be balanced against the mitigation measures that the company already has in place, such as address masking, out-of-band management and access filtering. **56022**

Cisco Resets Users' Web Passwords

CISCO LAST WEEK said it was resetting the passwords for all registered users of its Web site after discovering a security vulnerability in its search engine software that left those passwords exposed.

The passwords are used by Cisco customers, employees and business partners who have registered to get access to special areas of the Web site or receive e-mail alerts, said Cisco spokesman John Noh.

Cisco was made aware of the flaw in the search engine last Monday and corrected it immediately, Noh said. He added that as a precaution, the company began sending out new passwords and blocked users from accessing the password-protected areas of the Web site with their old ones.

According to Noh, Cisco officials don't think the vulnerability could be exploited to gain access to any sensitive information, such as the company's source code. He also said that the security hole didn't affect any of the products or technologies that Cisco sells.

Cisco uses Google Inc.'s software to power the main search feature on its Web site, but the problem didn't involve Google, Noh noted.

"It's a vulnerability related to a Cisco search tool," he said. "It's part of the Web application."

– Robert McMillan, IDG News Service

Hackers Bypass Microsoft's Antipiracy Checks

MICROSOFT CORP. has acknowledged that hackers were quickly able to bypass a process it implemented late last month to ensure that users trying to download software updates from its Web site have legitimate copies of Windows.

A July 28 posting on the Boing Boing weblog claimed that a JavaScript command string could bypass the software-key check in Microsoft's Windows Genuine Advantage 1.0 program. According to the posting, users can override WGA by pasting the command in the address bar of their browser and pressing Enter. The code "turns off the trigger for the key check," the posting said.

WGA requires users to run a program to verify that their copies of Windows aren't pirated before they can use Microsoft's software update services. Microsoft had been running it as a pilot program since last September but made the validation process a requirement on July 27.

"Within 24 hours, hackers claimed to have circumvented the process, and it appears that they did," a Microsoft spokesman said. He added that the company will fix the flaw that was exploited in an upcoming version of WGA.

The Boing Boing hack isn't the only way to get around WGA's restrictions that has come to light. David Keller, founder of PC consulting and services firm Compu-Doctor in Cape Coral, Fla., said in an interview conducted via e-mail that he was able to change his Internet Explorer settings to bypass WGA. He discovered means to do so after he encountered a flaw in the program that flagged a legitimate product key on a customer's copy of Windows XP Professional Service Pack 2 as invalid.

Keller wrote that he didn't have much luck working with Microsoft's support technicians, so he disabled the WGA add-on within the browser's Internet Options menu.

– Elizabeth Montalbano and Robert McMillan, IDG News Service

MORE NEWS ONLINE

What are thought to be the first viruses targeting Microsoft's Vista OS have surfaced:

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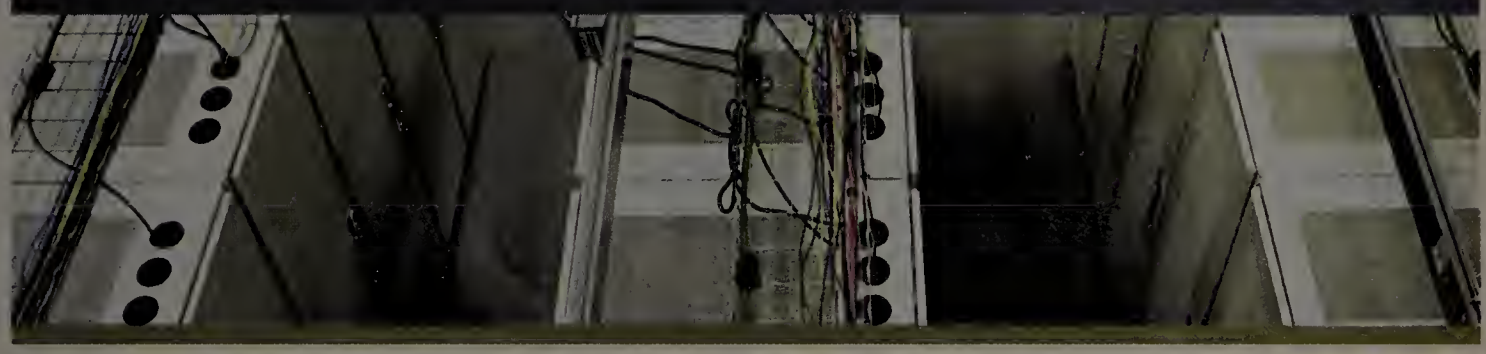

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FRANK HAYES ■ FRANKLY SPEAKING

Deliver the Goods

THE BIGGEST IDEA at last week's O'Reilly Open Source Convention didn't have anything to do with open-source software. At least, not particularly with open-source. The idea is this: You drive costs out of IT by identifying commodity functions and doing them more cheaply, while you gain business advantage with IT by identifying unique ways you can assemble IT components to let users do things your company's competitors can't.

Get it? Then you're smarter than me. I had to hear different angles on this idea from a half-dozen people before I realized they were all actually talking about the same thing.

And it's really *not* an open-source idea. Sure, you can decide to perform a commodity function with open-source software — say, Linux or Apache or MySQL — if that's cheaper than whatever you've been using. But instead, you might use a less-expensive proprietary software product. Or you might outsource the function. Or refactor a process to make it cheaper without changing the technology behind it.

That's the competition that open-source software is facing. And open-source people have figured it out. Oh, not all of them — there are plenty of code jockeys around who'll never care about anything at a higher level than queue optimization or race-condition resolution.

But companies like SourceLabs and SpikeSource understand that they can drive cost and risk out of open-source "stacks" — collections of software that perform standard functions. No more endless some-assembly-required fiddling to figure out what works together when all you want to do is some commodity IT function. Commodities shouldn't be hard or expensive, because they offer no business advantage except saving money. Yes, open-source people have figured out the virtue in being cheap and easy.

Cutting costs is only half the idea, though. The other half is gaining competitive advantage. Businesses do that when they have something their competitors don't. That won't be something they can buy off the shelf — their competitors can all buy the same stuff. And that something can't come from using industry best practices, because everyone else can follow the same recipes.

Once, IT would have looked for unique advantage by writing big custom applications. But today that takes too long and is too inflexible.

Instead, open-source-using companies like Google and Yahoo have figured out that their secret sauce is in the way they put together pieces of IT — software, hardware, networks and practices. Anyone can acquire the gear these companies use. How they put it together is the difference.

And *why* they put it together that way is the advantage. A clever architecture doesn't mean a thing if it doesn't help salespeople sell more products, HR people keep employees happier, managers run things more efficiently or executives steer the company more effectively.

When your users can do things competitors can't, you win business. When IT makes that possible, we're delivering the goods.

Again, that's not an open-source idea. Those IT components you string together might just as easily be proprietary or homegrown or software as a service. Open-source doesn't even have to be in the mix.

But users do. They're the ones who'll dope out the business end: how to sell a little more, how to manage a little smarter. And annoying as their clever, nonstandard computer tricks might be, that's where you'll find the competitive advantages that IT can support.

And that will happen only if IT pays attention to users and doesn't fight unusual behavior, but turns it into secret sauce instead.

That's the big idea. And it raises an even bigger question.

If the open-source crowd can figure out the relationships between IT commodities, users and competitive advantage, why can't we? **55986**

FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

SHARK TANK

It Doesn't Work That Way

Pilot fish replaces a dumb terminal in his company's parts department with a PC that's locked down so it runs only a Web browser to access new warehousing software. But parts manager doesn't like it – he asks fish to remove the mouse. "I don't want people wasting time browsing the Intranet," he says. They need it to use the warehousing application, fish points out, and thinks he's finally convinced the manager. Well, not exactly. "When I returned later, I discovered the manager had hidden the mouse behind the machine to stop time-wasting Net surfing," fish says, "as well as use of the Web app."

Yes, You Do

User complains that her new PC won't accept her password, so support pilot fish watches her type it in – and notices user doesn't press Enter or click OK. "See," user says, "nothing happens." You forgot to press the Enter key, fish says. User: "I don't need to." Fish: Yes, you do. User: "No, I don't." "We went back and forth like that for a minute," fish says, "before I gave up and said, 'Well, you have to now.' "

Wrong Page

There's a [illegible] on this small college campus, and it looks to a pilot fish on the scene like the source is a networking problem. "I suggested to the VP of IT that he consider paging the network administrator, who was off-campus at the time," reports fish. Baffled vice president responds, "But I can't page him. I don't have a pager."

Dial H for Huh?

This company creates an H: drive on each PC, and users know the files in it are automatically backed up. So when one user calls the help desk to say he's lost a document from his H: drive and needs it restored, pilot fish is puzzled. "We checked the backup tapes and there was no such document," says fish. "After a lot of investigation, it turned out the user had created the document on his home machine and created a folder called 'H drive' – and wanted to know why we didn't back it up."

Something Missing

Senior manager calls tech support pilot fish in a panic: "Your guys supposedly cleaned up my virus, but it's back! The pop-up message says there's a Rem-ved virus on my PC!" Fish has never heard of that one, and it takes some work to figure out why. "Turned out the person who did the virus-cleanup job sent a net send message to the manager saying 'Removed virus on your PC,' " says fish. "Unfortunately, the sender left out the o in 'removed,' which caused all the hullabaloo."

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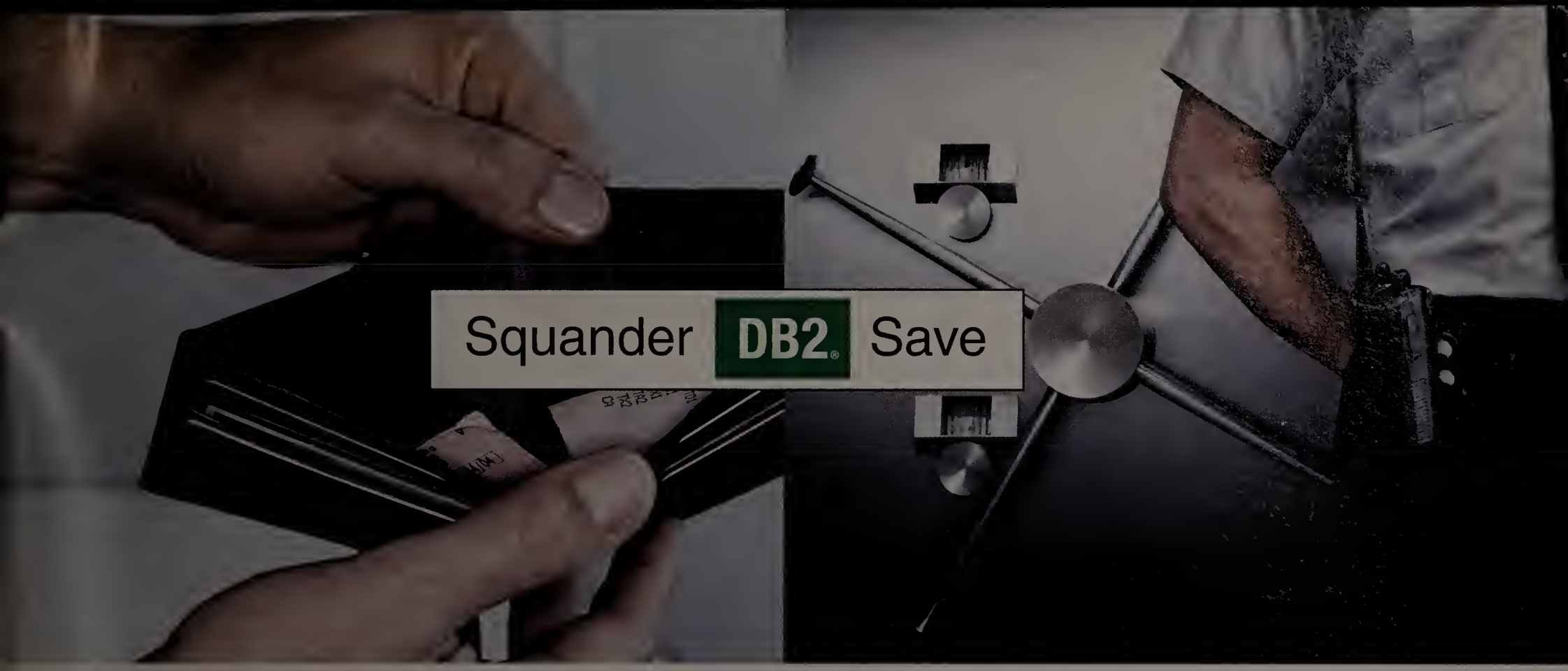

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